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ABSTRACT

Many elementary teachers who have taught time-telling skills would propose that the mathematical skills associated with time-telling are among the most difficult for young students to learn. This booklet was developed to relate some of the concepts of time to physical models, providing methods for isolating specific time-telling concepts within a concrete framework. The time-telling of each hand of the clock is presented separately, with the major focus on using the hour hand. The booklet contains stories, activities, games, bulletin board ideas, and worksheets designed to accommodate a range of teaching and learning styles. Many of the activities in the booklet's seven sections are also designed to help integrate mathematics with other areas of the elementary school curriculum, such as social studies, language arts, and science. Reproducible worksheets and blackline masters are included in the back of the book. (TW)

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ONE HAND AT A TIME

Using a One-Handed Clock to Teach Time-Telling Skills

ED286716

Patricia E. Smith

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DALE SEYMOUR PUBLICATIONS Mathematics

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Thanks . . .

To CS_1 for your inspiration.
To CS_2 for your cooperation!

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Introduction

Most elementary teachers who have taught time-telling skills will agree that these mathematics skills are among the most difficult for students to learn. Learning to measure time is a challenge for young students. Time-telling skills are also difficult for students to retain. Few elementary math concepts are as abstract as telling time. The child development studies of Jean Piaget indicate that most children will not be able to understand the complex concepts of time and the relationship of the two moving clock hands until the children are about nine years old.

The trend toward the use of physical objects to teach difficult abstract concepts in mathematics is a sound and welcome one. It remains a challenge, however, to relate the concepts of time to physical models. *One Hand at a Time* provides a method for isolating specific time-telling concepts and for bringing the abstract concepts to a concrete framework.

One Hand at a Time separates complex time-telling skills. True to its title, this book teaches the time-telling of each clock hand separately. The main focus, however, is telling time using the hour hand. There's a good reason for this: originally, clocks had only an hour hand. It was not until much later that a minute hand was added.

Through this approach to teaching time, students gain a thorough understanding of the hour and the function of the hour hand. They learn to read times using only the hour hand at the hour, half-hour, and quarter-hour positions. And they learn where the hour hand is before or after the hour. Eventually, they learn how the two hands of a clock work together—but not before they understand how each hand works individually.

I recommend that teachers use the one-handed clock approach as the sole approach rather than mixing the lessons in this book with lessons that use two-handed clocks. As students practice telling time, encourage them to read time using standard clocks. Urge them to ignore the "long hand"—the minute hand—and to focus only on the hour hand. When students have successfully learned how to tell time to the hour and to the half hour, they are ready to learn the minute hand, its use, and its relationship to the hour hand. This is the subject of Unit 7, a transitional unit that bridges the one-handed clock approach to the two-handed clock approach to time-telling.

The materials and approach in *One Hand at a Time* can be your developmental program for teaching time-telling skills to primary students. It can be used effectively as an alternative approach for remedial elementary students, and it can serve as the basic program for special education students of all ages. The variety of stories, activities, games, bulletin board ideas, and worksheets accommodate a range in teaching preferences and learning styles. In addition, the stories and activities help to integrate mathematics with other areas of the elementary curriculum—social studies, language arts, and science.

Unit 1
Getting Familiar with Time

This unit begins with a story that provides motivation for learning time-telling. Read aloud or tell this story to your class. Five activities follow the story. The activities help familiarize your students with clocks, watches, and other time-telling devices and introduce students to the history of time-telling. Students begin to learn that time is "measured" by clocks and watches.

It's About Time!

Once upon a time there was a little boy named Tommy. His friends and family called him "Tommy Timeless." Tommy really lived up to his name. You see, Tommy thought he could go through life without paying attention to time. Somebody always made sure Tommy was in the right place at the right time. Tommy never even learned how to tell time. He just didn't think it was important.

Tommy always got to school on time because his mom woke him up at seven o'clock. And his older sister made sure he got to the bus stop by eight o'clock. As Tommy walked to school from the bus, he listened for the school bell that rang at 8:30. It meant that class was beginning. When Tommy heard the bell, he hurried to his classroom. That meant he was always a couple minutes late for school. But that was the best he could do, since he couldn't tell time.

Getting through the school day was no problem. Tommy always relied on his friend Davy to make sure he was on time for everything. He was always in line at the bus stop by 2:45.

After school, Tommy usually played with Mandy, who lived down the street. When Tommy saw his dad coming home from work at 5:30, he knew it was time to go home for dinner. Soon after dinner he would watch his favorite television show. He wouldn't miss it for anything, especially on Fridays. On Fridays they had a contest. They chose someone's name from a huge basket and gave that person until eight o'clock to call the television station. When the person called, he or she would have to answer a question correctly and would win a bicycle. Tommy always hoped they'd choose his name.

After the television show, Tommy would do his homework or read. His bedtime was nine o'clock. Of course, Tommy couldn't tell time. He just waited until his mother told him to go to bed.

Tommy usually played ball on Saturdays. He was the best pitcher on his team. Every Saturday morning, Ann, the catcher, phoned Tommy to tell him it was time to go to the playing field. Next Saturday was the big game. Tommy's team was playing for the championship, and Tommy would be pitching.

As you can see, Tommy seemed to get along just fine without telling time. Sometimes he was late, but he didn't care. One day, though, some terrible things began to happen that Tommy would never, ever forget.

It was a Friday morning. Tommy was sleeping soundly. The night before, he had stayed up a little late studying for a spelling test. This morning, Tommy's mother was busy, and she forgot to awaken Tommy. Finally, Tommy woke up. He missed breakfast, and he missed the bus. He had to run almost all of the way to school. He didn't hear the 8:30 bell because a fire truck drove by just then. Since he didn't hear the bell, Tommy thought maybe he wasn't late for school after all.

But he was late. The whole class stared at Tommy as he walked into the room. They had just finished the spelling test Tommy had studied so hard for. Tommy would have to stay after school to take the test.

To make matters worse, Tommy's friend Davy was sick that day. Tommy was late from recess because Davy wasn't there to tell him when to go back to class. Now he

would have to stay in during recess every day next week.

At eleven o'clock, the teacher told Tommy to go to the library to check out a book for his science project. She told him to be back in fifteen minutes. Usually, he went with his friend Davy. Without Davy, how would he know when the fifteen minutes were up? He could ask the librarian to tell him when fifteen minutes had passed. But he was too embarrassed to let her know that he couldn't tell time.

When Tommy thought fifteen minutes had passed, he strolled back to the classroom. Everyone was gone! Tommy figured it was probably lunchtime. He rushed toward the cafeteria and saw that everyone was already finished eating. Tommy didn't know it, but it was already 12:30!

What a day! Everything was going wrong. Tommy had missed breakfast and lunch. He had missed the spelling test and had to stay after school to take it. He missed the bus, so he had to walk home from school.

As usual, Tommy went to Mandy's house after school. He expected to stay at Mandy's until he saw his dad coming home from work. But his dad didn't drive by that day. He had car trouble, and a friend drove him home. Tommy didn't notice. When he finally realized something was wrong, he ran home. Everyone had finished dinner. Luckily there were leftovers, but he had to eat them cold.

As he took his last bite, Tommy remembered about his favorite television show. He rushed to the television and turned it on . . . just in time to hear his name being called. Tommy had 30 seconds left to call the television station.

He frantically dialed the telephone number and gave his name. The announcer told him, "You have exactly ten seconds to answer this question. The question is: What time does this television show begin?" Tommy's first thought was, "Oh, that's easy, it begins right after dinner." But then he realized the announcer would laugh if he said that. Finally, Tommy mumbled, "I, I don't know."

Tommy had lost his chance to win the brand new bicycle. The question was so easy. Anybody else would have known the show started at 7:30. But Tommy Timeless didn't know. He couldn't tell time. Tommy went to bed feeling embarrassed and angry at himself.

Morning came, and Tommy waited anxiously for Ann, the catcher, to phone him. He waited for a long time. Then he tried phoning Ann. Her mother answered, "Oh, didn't Ann call you? She was so nervous about the game, she must have forgotten." Tommy ran to the playing field, but it was too late. The game was over. Without Tommy as pitcher, his team just couldn't make the outs. Everyone was sad about losing, and they were angry at Tommy because he hadn't shown up on time. Tommy felt terrible. He left the playing field and headed home.

By this time, Tommy realized what a fool he had been. Everything in his life seemed to depend on time. Why hadn't he learned to tell time? Why had it taken him so long to realize that telling time is important?

That afternoon, Tommy counted the money in his piggy bank. He had $14.51. He asked his mom to take him to the store. There, he found an alarm clock for $5.00 and a watch for $8.95. He had just enough money to buy both.

That week, Tommy made a point of learning to tell time. He no longer was late. And he no longer had to rely on family and friends to tell him what to do and when to do it. When Tommy's friends and family commented on his new behavior, Tommy just said, "It's about time!"

Activities

Clock Collection

Type of Activity: entire class
Materials: magazines and store catalogs, scissors, paste, lined paper, pencils
Procedure: Have students look through old magazines and catalogs to find pictures of various types of clocks, watches, and timers. They may cut out each picture, paste it to lined paper, and write a short description or comment about it. Tack the pictures to the bulletin board, or have students make their own classroom "Time Scrapbook."

Scavenger Hunt

Type of Activity: entire class/individual homework assignment
Procedure: List or draw on the chalkboard specific types of clocks for students to find, such as clock radio, grandfather clock, alarm clock, digital clock, pocket watch, necklace watch, wrist watch, digital watch, kitchen clock, oven range clock, clock with Roman numerals, numberless clock, and so on. As a homework assignment, have students list all the different types of clocks in their home and in other familiar places.

Used Clocks

Type of Activity: entire class
Materials: a couple of old, broken clocks
Procedure: Write a letter to students' parents, requesting old, broken clocks to display in the classroom and for students to dismantle. As an alternative, you may wish to buy a couple of clocks at a thrift store. Allow students to wind the clocks, reset the hands, and so on. Then divide the class into as many groups as there are clocks to dismantle. Have each group take apart one clock, displaying the pieces. Encourage students to discuss their discoveries.

Clock History

Type of Activity: entire class
Procedure: Give a brief overview of the history of clocks and time-telling. The following summary should be helpful. Learning about the history of time-telling helps students grasp the concept of measuring time. An historical perspective also helps students understand why people throughout history have found a need to measure time. Give as much detail as you think your students will enjoy. If they are especially interested in the history of time-telling, have them share books they find on the subject at the library. Here is a summary to help you.

Clocks didn't always look the same as they do today. Long ago, people would make marks on the ground where the shadow of a tree fell. The shadow changed as the sun moved in the sky. People used the marks to measure time. This was a kind of sundial. Eventually, people started making sundials using other materials.

A sundial can be used only when it is sunny outdoors. So people created

other ways to measure time. People in ancient times created water clocks, sand glasses, and candle clocks.

A water clock is simple. A large jug is filled with water and marked to show the hours. Water drips from a hole in the jug. As the water drips out, the water level goes down. The marks measure how much water has dripped out in an hour. Water clocks were used in ancient Egypt, Greece, and China.

Sand glasses were also used in ancient times. A sand glass measures the time it takes its sand to drop through a narrow passage from one container to another. A candle clock is marked with notches or numbers to show the hours. It measures the time it takes to burn down to each notch.

Mechanical clocks were invented about 700 years ago. These early clocks had an hour hand, a dial, and a wheel. Later, a pendulum was added to turn the wheel at regular intervals. The pendulum made the clock more accurate. So a minute hand was added.

A spring could also be used instead of a pendulum to turn the wheel. Spring-driven clocks could be made very small. They also could be carried from place to place. In fact, many watches today are spring-driven.

Most modern clocks and watches use electricity. An electric current vibrates through the clock at an even rate. This keeps the clock running on time.

Making a Sundial

Type of Activity: entire class
Materials: "Sundial Gnomon" blackline master (p. 6), tagboard, scissors, paper plates or cardboard circles (the type on which pizzas are baked), tape, pencils, and the sun!
Procedure:

a. Copy the sundial gnomon on tagboard. Give each student a copy. Explain that a gnomon is the pointer (or indicator) on the sundial.

b. Direct students to cut out their gnomons along the broken line and to fold them along the fold lines. The diagrams on the gnomon master sheet should help.

c. Each student may tape the gnomon flaps onto a paper plate or cardboard circle, making sure the gnomon is in the center of the plate.

d. Take the students outdoors at different times of the day. (Students may continue this activity at home.) Ask them to set their sundials to the sun, with the gnomon pointing north, and to record (on the paper plate) each daylight hour of the day. The hour is indicated by the point of the gnomon's shadow.

Making a Water Clock

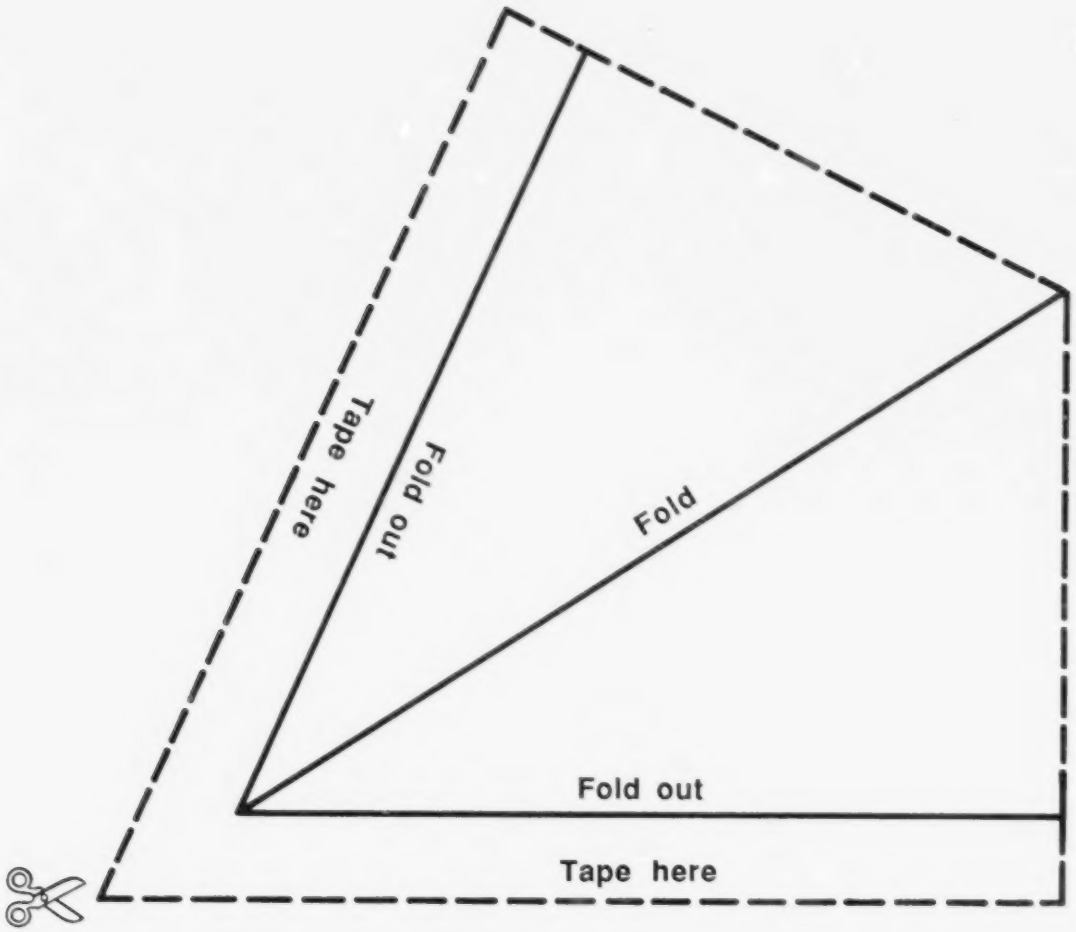
Type of Activity: entire class
Materials: large plastic jug; water; marking pen; sharp, pointed object; empty can
Procedure:

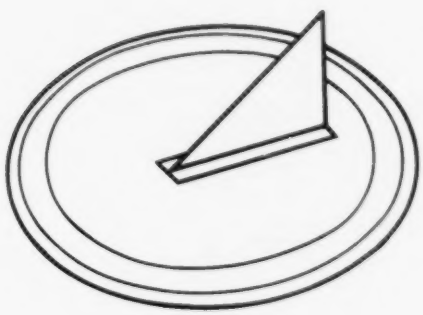
a. Fill the jug with water and mark the water line.

b. Place the jug on the edge of a desk or table, or near the sink. Using the sharp, pointed object, punch a small hole near the bottom of the jug. The hole should be tiny enough that the water only drips from the hole, into the container or sink.

c. After one hour, mark the new water line. Repeat this step after another hour. Ask students to estimate how long (how many hours) it would take for the water clock to run out of water. Let the water continue dripping from the jug. Each hour, mark the new water line to test the students' estimate.

Sundial Gnomon





Your completed sundial should look like this.

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Unit 2
Face-to-Face with the One-Handed Clock

This unit begins with a story that introduces students to a special clock—one that has only an hour hand. Read aloud or tell this story to your class. The story is followed by five activities that help students learn the sequence of numbers on the clock face. This unit also contains two worksheets that reinforce number sequence skills.

The One-Handed Clock

This is the story of the one-handed clock. It is a clock that tells the hour but not the minute. You see, many years ago, time-tellers only needed to know the hour. People didn't have to be exactly on time, to the minute. Besides, people weren't in a hurry like they are today.

There were no cars or trains or jets. People usually walked or rode horses. Long ago, there were no televisions, radios, or movies. No one needed schedules telling them exactly when an event would begin or end. Getting someplace or starting something at an approximate time—to the nearest hour—was just fine. Instead of saying, "I'll meet you at 2:15," you would say, "I'll meet you at about two o'clock."

Everything was simpler then, too. A one-handed clock was considered a great invention. It was the best time-telling device to come along.

Gradually, people became busier, and life moved much faster. Soon, people were saying that the one-handed clock wasn't accurate enough. That's when the mighty minute hand was added to the clock. The minute hand moves much faster than the hour hand. You'll learn more about the minute hand later.

Soon, even the minute hand wasn't accurate enough. So another hand was added to the clock. It is the second hand. The second hand moves even faster than the minute hand. You can watch it move.

Most clocks today have an hour hand, a minute hand, and a second hand. That's three hands. But let's go back in time for a while and think about the old-fashioned one-handed clock. Look at a clock or a watch. Find the hour hand. Remember, it's the shortest hand and it moves very slowly. In fact, if you watch the hour hand constantly you'll think it doesn't really move at all. Just for a while, ignore the minute hand and the second hand. Now, let's get on with telling time!

Activities

Race Around the Clock

Type of Activity: game for two to four players

Materials: "Race Around the Clock" game sheet (p. 12), "Clock Face" reproducible master (p. 13), tagboard, scissors, brads, pencils

Procedure:

a. Divide the class into groups of two to four students.

b. Make a clock spinner for each group: copy the clock face master onto tagboard, cut out the spinner arrow, and attach it to the clock face using a brad.

c. Give each student a copy of the game sheet. Give each group a clock spinner.

d. Each player takes a turn spinning the arrow. When the arrow stops, the player calls out the closest number to which the arrow points. She or he then writes that number in the correct circle on the game sheet.

e. The game continues as the next player takes a turn. If the spinner arrow stops at a number that a player has already spun, that player loses the turn.

f. Players continue to take turns spinning and writing numbers until one player has filled in all twelve numbers on his or her clock. All numbers must be in the correct sequence before the winner is declared.

A Round Number Line

Type of Activity: entire class

Materials: large sheet of paper or tagboard, felt-tipped marker, scissors. Use this round number line to demonstrate the numerical sequence on a clock face. After you have demonstrated how it works, students may make their own round number lines using yours as a model.

Procedure:

a. Cut a strip of paper or tagboard about two feet long by four inches wide.

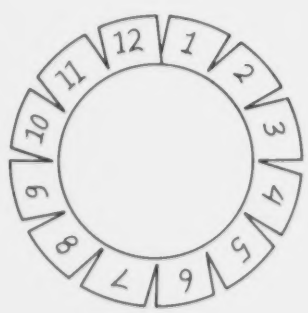
b. Write the numbers 1 through 12 on the strip, spaced at equal intervals.

1	2	3	4	5	6	7	8	9	10	11	12

Step b.

c. Clip the paper or tagboard once between each number, cutting halfway down the width of the strip.

d. Stretch the strip around, joining the two ends. Hold the rounded strip so the number 12 is straight up. Point out the position of each number, and have students compare it with the numbers on an actual clock. (Note that some numbers will be sideways and others will be upside down.)



Step d.

Making a One-Handed Clock

Type of Activity: entire class or individual
Materials: paper plates or cardboard circles, "Clock Face" blackline master (p. 13), scissors, tagboard, brads
Procedure:

a. Give each student a paper plate or cardboard circle, and a copy of the clock face. Have students cut out their clock faces, discarding the spinner arrow, and glue the clock face to the paper plate or cardboard circle.
b. Cut a tagboard hour hand for each student, using the spinner arrow on the clock face page as a pattern.
c. Each student then attaches the hour hand to the clock, using a brad. You may have to help students poke the brad through the tagboard hour hand and the paper plate or cardboard circle of the clock. The ends of the brad should be bent open against the back of the plate.

Picture Puzzle

Type of Activity: individual
Materials: "Picture Puzzle" blackline masters (pp. 14–15); file folder; colored marker; scissors; glue; lightweight cardboard; an attractive, colorful seven-by-nine-inch picture cut from a magazine; an envelope; a stapler. Set up this activity so students may work with it individually.
Procedure:

a. Glue a copy of the "Picture Puzzle" clock faces page (p. 14) to the inner right side of the file folder. Trace over the lines with a colored marker.
b. Cut a seven- by nine-inch piece of cardboard. Make a copy of the "Picture Puzzle" numbers page (p. 15), cut along the outer line only, and glue the page to the cardboard. Make sure the entire sheet is covered with glue, since the individual pieces will be cut apart later.
c. Glue the magazine to the back of the cardboard. Again, make sure you cover the entire sheet with glue, since it will be cut apart.
d. After the glue dries on the cardboard (front and back), cut apart the puzzle pieces. Store the pieces in an envelope stapled to the file folder.
e. Solving the puzzle: The student places all the pieces on the table, number side up. The student decides what number is missing from each clock and finds the matching puzzle piece with that number. When all the puzzle pieces are in place, the student closes the file folder and gently turns over the folder so that the front cover is on the bottom. When the student opens the file folder again, he or she sees the assembled magazine picture, which serves as a self-checking device.

Making a One-Handed Watch

Type of Activity: entire class
Materials: light colored construction paper, clock stamp (about 2 inches in diameter), stamp pad, 3/4-inch non-roll elastic, sharp scissors, brads
Procedure:

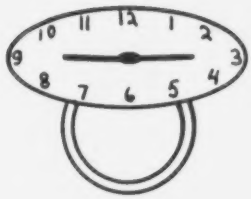
a. Make one clock stamp impression on construction paper for each student. Cut out the clocks. (If you do not have a clock stamp, you can draw a clock, about 2 inches in diameter, and add numbers. Copy this clock several times. Tape the copies to an 8-1/2- by 11-inch sheet of paper, and copy this sheet onto construction paper.)

b. Cut one 5-inch strip of elastic for each student. Snip a small hole at each end of the elastic, about 1/2-inch from the end. (The elastic strip becomes the wristband of the watch.)

c. Give each student a construction paper clock, an elastic strip, and a brad. Direct students to form a circle with the elastic strip, overlapping the strip at the ends, and to push the closed brad from the inside of the circle up through the holes in the elastic.

Step c.

d. Students will then push the brad up through the paper clock, punching a hole in the center of the clock face and bending the brad prongs across the clock face.



Step d.

e. On each student's watch, cut off the end of one brad prong, leaving just enough to secure the paper clock to the elastic. Students slip the elastic around their wrists and wear the one-handed clocks as wrist watches.

Step e.

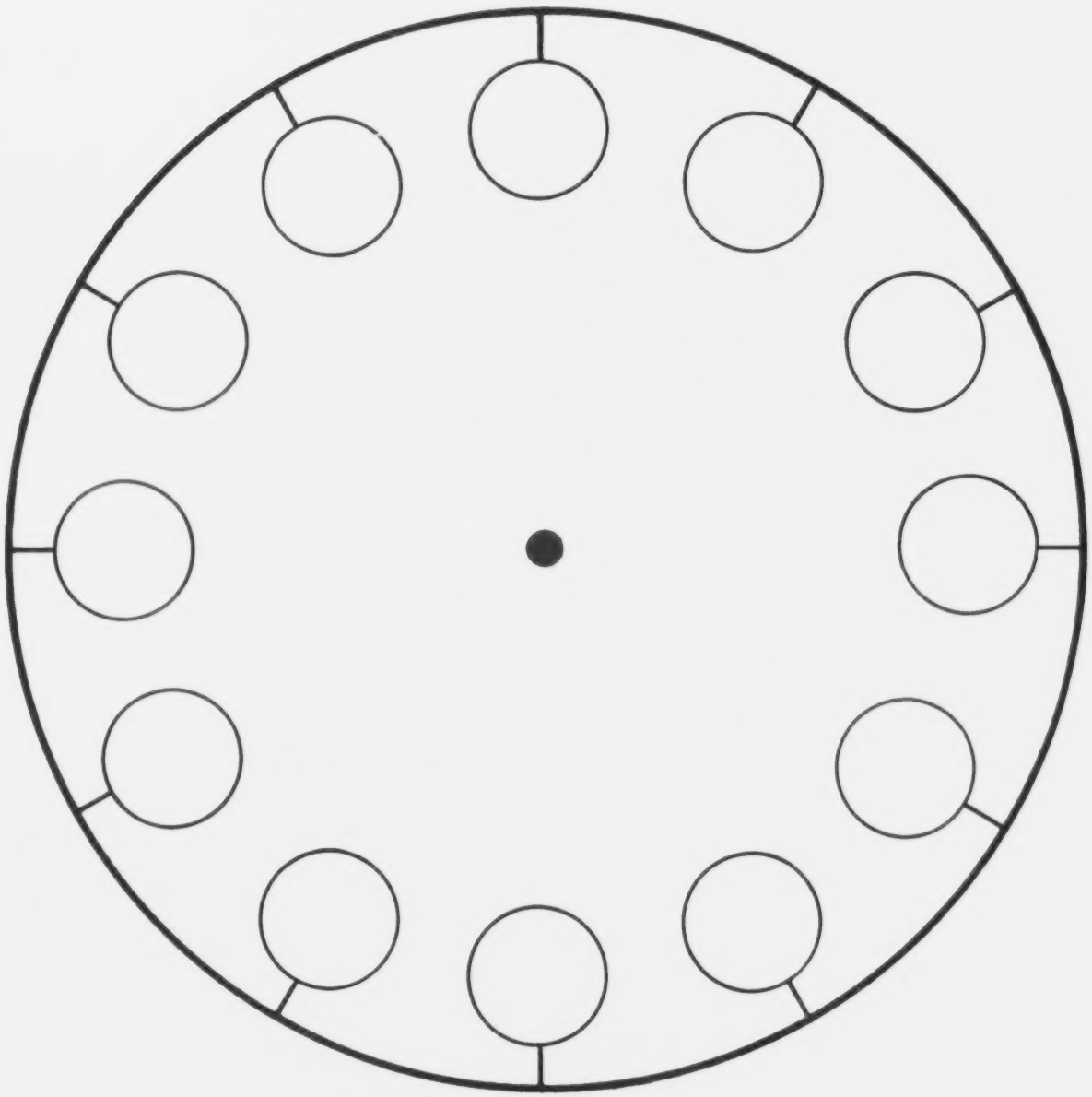
f. Instruct students to turn the clock face around (rather than the hand) to show the time.

Worksheets

Assign the following worksheets to be completed independently. Both of these worksheets help students learn the numbering sequence on a clock face.

Clock Numbers (p. 16)
Time for a Riddle (p. 17)

Race Around the Clock



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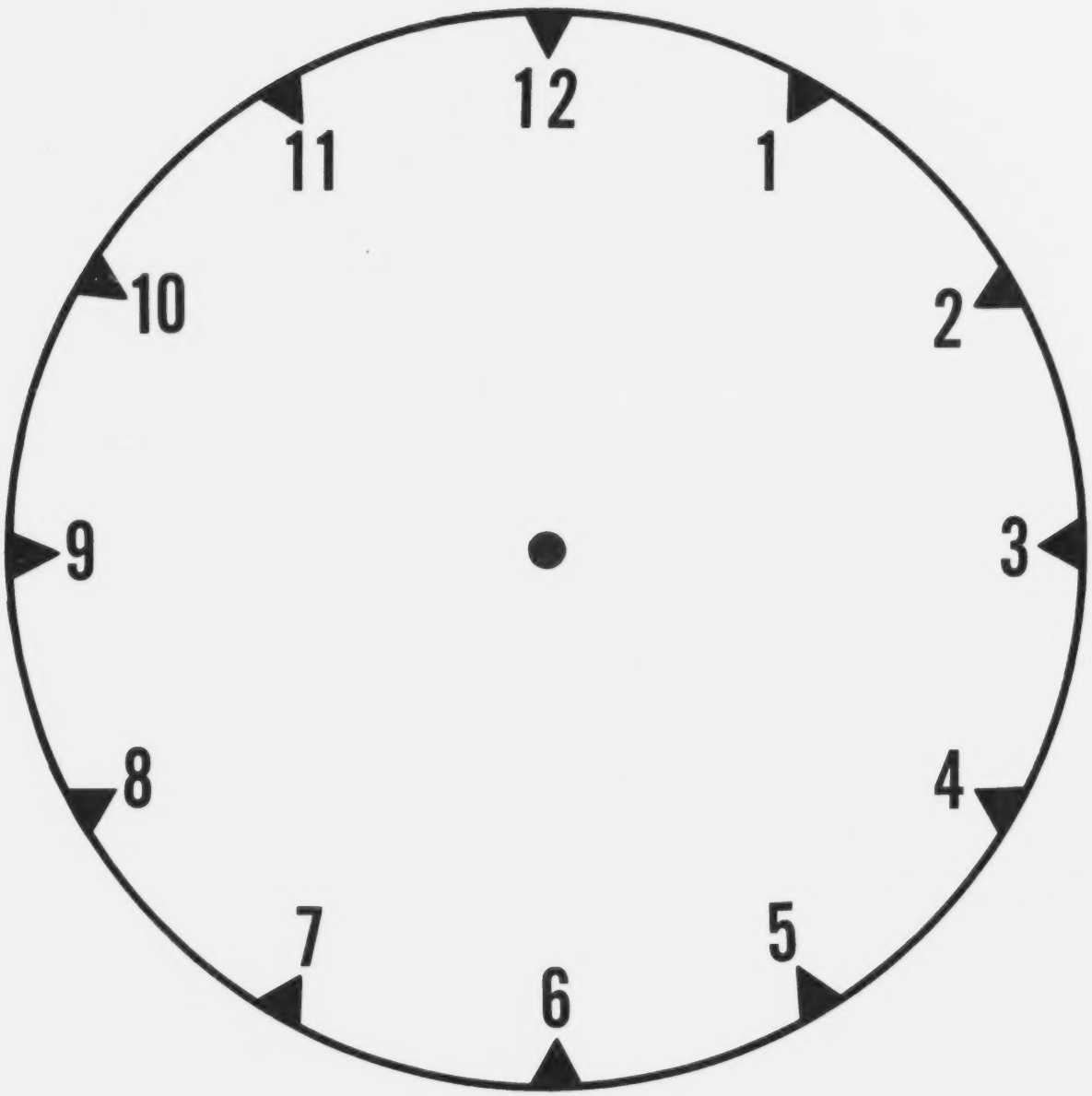
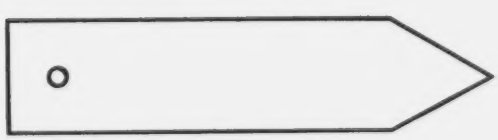
Clock Face





spinner arrow

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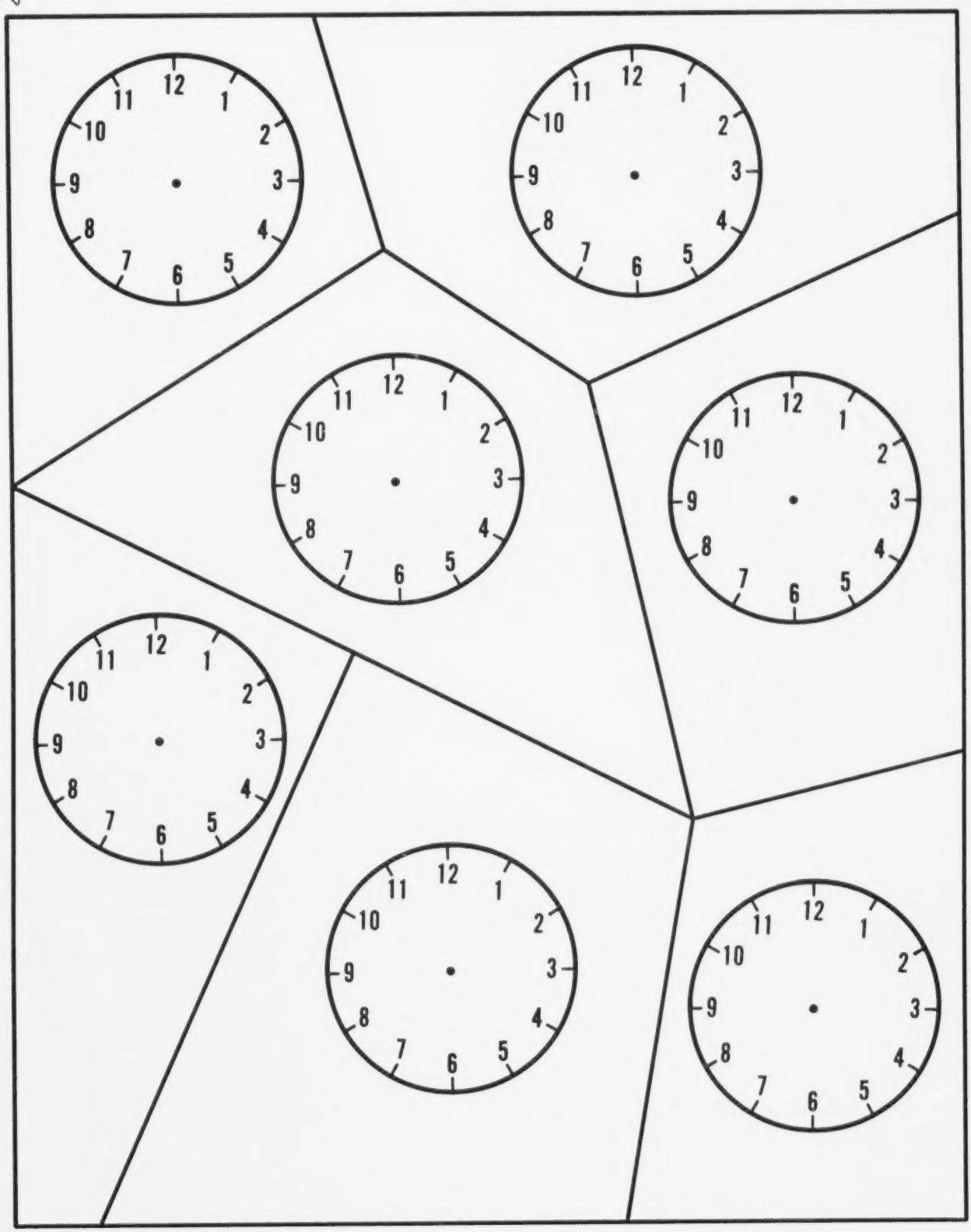
Picture Puzzle



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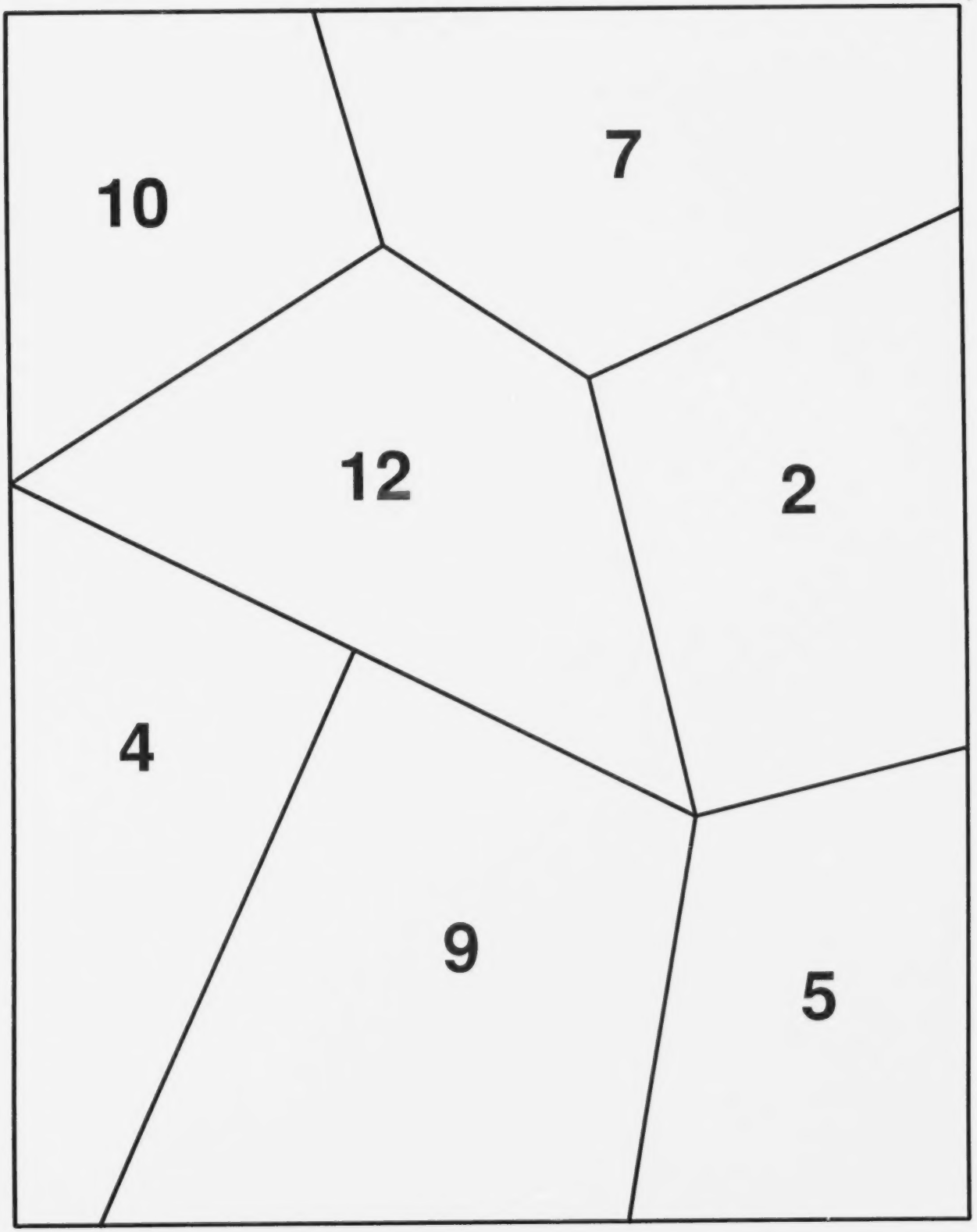
Picture Puzzle



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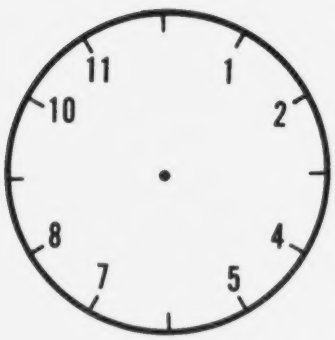
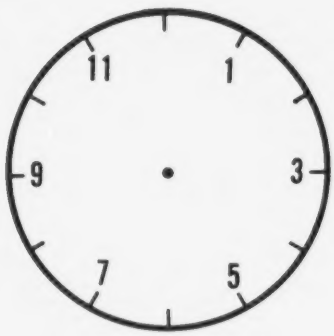
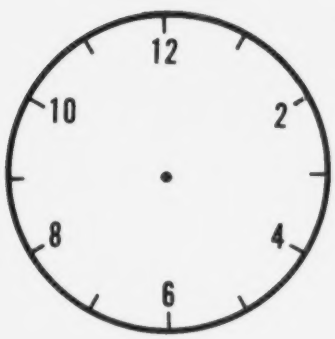
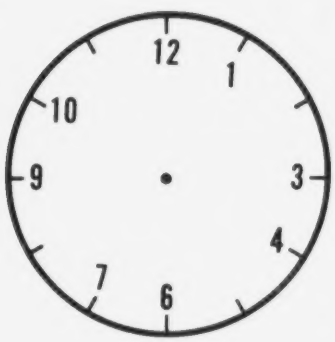
Clock Numbers

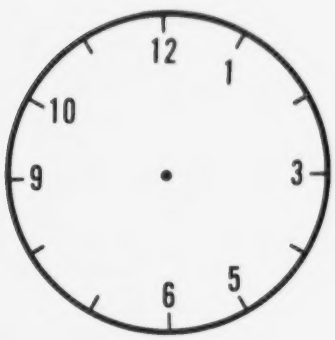
Fill in the missing numbers on each clock.

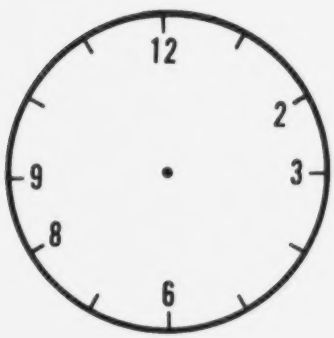


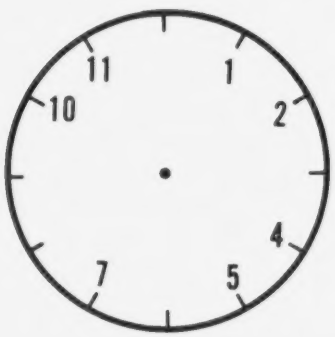












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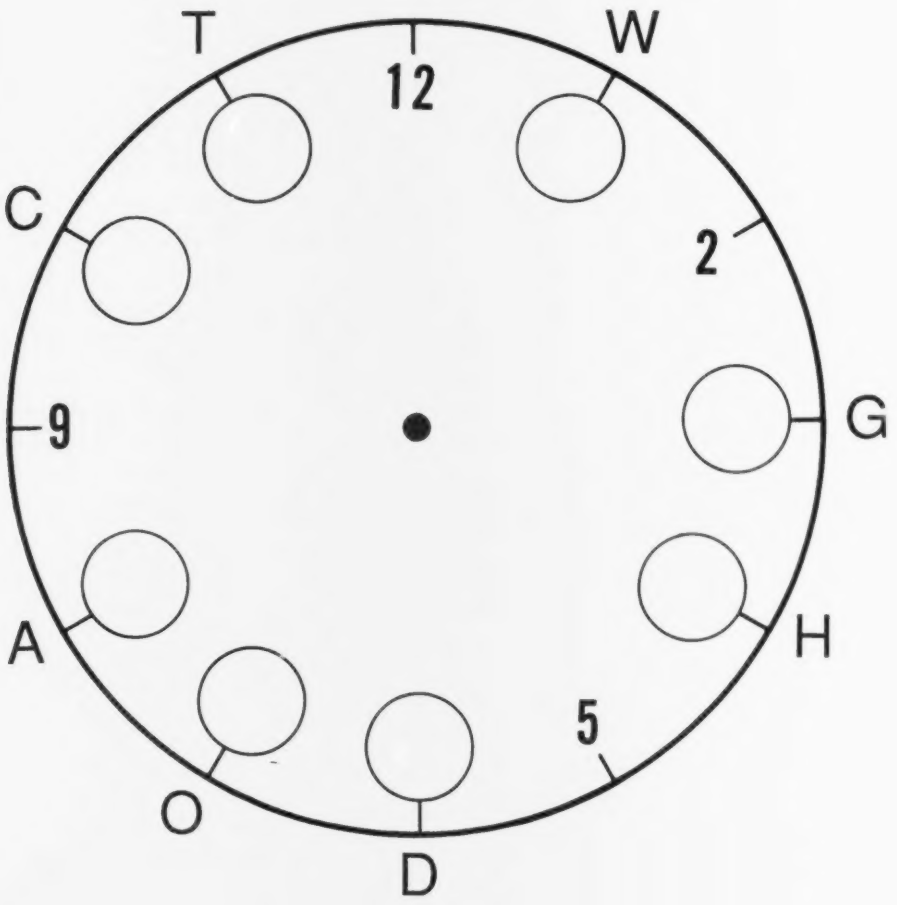
Time for a Riddle

Fill in the missing numbers on the clock.



There is a letter next to each number you wrote.
Write the correct letter for each number below.
Then you will have the answer to this riddle.

What kind of dog tells time?

___	___	___	___	___	___	___	___	___
8	1	8	11	10	4	6	7	3

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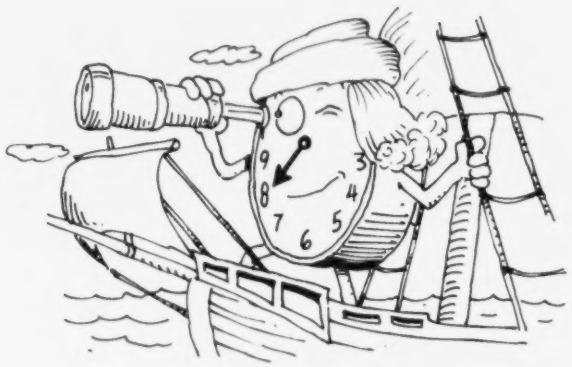
Unit 3
This Is Hour Time

The story at the beginning of the unit introduces the twelve-hour clock face. Read aloud or tell this story to your students. The first three activities following the story help students understand the concept of duration. The distance between two numbers on the clock stands for a length of time. Learning this distance-time association is essential to time-telling. The remaining activities and the worksheets in this unit help students learn to tell time to the hour.

Christopher Columba-Clock

You have probably heard of Christopher Columbus. Do you know what he is famous for? Many people say that it was Christopher Columbus who proved that the earth is round. Actually, the earth is a sphere. It is round in all directions.

I am sure no one has heard of me. I'm Christopher Columba-Clock. I have a lot in common with Christopher Columbus. You see, I am the very first round clock. Let me explain how I came about.



First, you have to know something about the earth. Our planet is turning constantly. It makes a complete turn each day. Like the earth, time is constantly "turning," completing a circle each day. Each day, the sun rises, reaches high overhead, and then sets. The next day it repeats the circle.

A day is divided into 24 parts, called *hours*. Now, what do you think is the best way to keep track of those hours? Before I was invented, people tried to make a straight line clock, but they always ran out of space and had to stop counting the hours. Finally, they figured out that they needed a round clock. This round clock would turn just like the earth and, as it turned, it would show the hours in a day. That's when I was invented.

I am round, and I have hands that turn around my face to tell the time. My hands go around and around. I remind you that time is like a circle—it moves constantly, repeating itself. My hour hand moves from one number to the next each hour. But I have only twelve numbers, and there are 24 hours in a day! Now, how does this work?

Actually, I am a little like a sundial. This is how a sundial works: as the sun moves across the sky from sunrise to sunset, it casts a shadow on the dial. At sunrise, the shadow is long. As the morning goes by, the shadow gets shorter and shorter. At noon, when the sun is high overhead, the shadow is very short. During the afternoon, the shadow gets longer and longer again.

It just seemed as if noon marked the end of something. And, as the sun went down, people just naturally started over with the time, from one o'clock to two o'clock, and so on to twelve o'clock midnight. This way, people wouldn't have to count 24 hours in a day. They would only have to count to twelve and then count to twelve again. So the problem of having 24 hours in a day was solved by dividing the day into two parts: twelve hours before noon and twelve hours after noon.

I was really glad they did this. Twelve numbers fit nicely on my face. Can you imagine my face having 24 numbers? Can you imagine having to say "It's thirteen o'clock"? Now, see where my inventors placed the number 12 on my face? It's right on top, high overhead like the sun is at high noon. Just as the sun returns to its overhead position at twelve o'clock noon, so my hands go around, always coming back to twelve o'clock again.

Now, if anyone asks why clocks are round
You can surely give them a shock.
Just tell them the story of me, you see,
I'm Christopher Columba-Clock.

Activities

Filling Up an Hour

Type of Activity: individual (may be assigned as homework)
Procedure: Ask each student to select one waking hour in her or his day (for example, from four o'clock until five o'clock in the afternoon). During that hour, she or he must pay careful attention to how the time is spent. Have the students list the activities or draw pictures to illustrate how the time was spent. Make sure students have identified the times. Display the lists and pictures on the bulletin board.

Time Is Up

Type of Activity: entire class
Procedure: When the clock is on the hour, announce the time to the class. Cover all functioning clocks and watches. Ask students to quietly whisper the time to you when they think an hour has passed. (For example, if you announced one o'clock, students will try to estimate when it is two o'clock.) When a student whispers the estimated time, secretly show him or her the time. Announce the time when an hour has passed. Discuss why it is sometimes difficult to judge the time.

Fast and Slow Hours

Type of Activity: entire class
Procedure: Lead a class discussion about the passing of time. Make two columns on the chalkboard, one for "fast" time and one for "slow" time. Ask students to give examples of times that seem to go by quickly and examples of times that seem to drag by slowly. List these in the appropriate columns on the chalkboard. Point out that the nature of the activity (whether it is fun or dull, for example), determines how fast or slow the time passes. However, time is constant, and the hands on the clock always move at the same speed.

The Human Clock

Type of Activity: entire class
Materials: butcher paper, scissors, tape, marking pen
Procedure:

a. Cut three or four lengths of butcher paper, at least six feet long. Tape them together on the wall, side by side and extending from the floor. (It should be about six feet across in all.) Draw a clock face on the butcher paper.
b. Ask one student to stand in front of the clock face, facing it. This student is the "human clock." He or she places one arm in front of his or her body, out of the way. Have another student suggest a time to the hour. The "human clock" moves the free arm around the clock face, indicating the time on the clock. (The "human clock" may use the right arm for times from twelve o'clock to six o'clock and the left arm for times from six o'clock to twelve o'clock.)

Time Detective

Type of Activity: entire class
Materials: student practice clocks constructed in the Unit 2 activity "Making a One-Handed Clock"
Procedure:

a. Choose one student to be the "time detective." That student covers his or her eyes while you write a time on the chalkboard and while the other students set their practice clocks to that time.
b. While the "time detective" is still covering his or her eyes, quietly tell one student in the group to set her or his clock to a different time than that written on the chalkboard. Erase the time you wrote on the chalkboard.
c. At your signal, the "time detective" circulates through the classroom to find the clock that shows the "wrong" time. Give each student a chance to be either the "time detective" or the person whose clock shows the "wrong" time.

Time Marches On

Type of Activity: entire class
Materials: student practice clocks
Procedure:

a. Discuss the term "clockwise." Explain that an hour hand (and the other hands) always moves in a "clockwise" direction.
b. Ask questions involving elapsed time, such as the following:

- How many hours are there between two o'clock and three o'clock?
- If you put a roast in the oven at three o'clock and it must cook for three hours, at what time would you take it out of the oven?
- School starts at eight o'clock and lasts for six hours. At what time does school get out?

Have students use their practice clocks to help them answer these questions.

The Hour on a Digital Clock

Type of Activity: entire class
Procedure: Ask students to identify the twelve times to the hour on a digital clock. Without explaining minutes, simply show students a digital clock and point to where the hour time is indicated. Explain that when the time is exactly to the hour, the numbers to the right of the "colon" will be "00." Have the students practice writing digital times to the hour. Name a time and have students come to the chalkboard to write the time. If you wish, show the students a time to the hour on a one-handed clock and have them write that time in digital form.

Worksheets

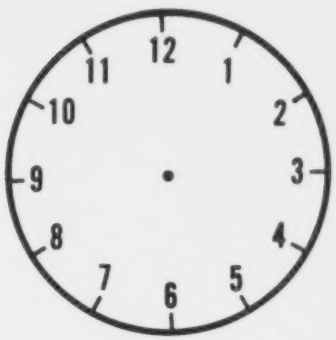
Assign the following worksheets to be completed independently. These worksheets help students tell time to the hour.

Can You Give me a Hand? (p. 22)
Make Them Match (p. 23)
Time Is Passing By (p. 24)
Clock to Clock (p. 25)

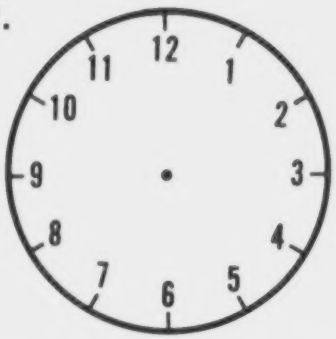
For additional worksheets, make one copy of each open-ended master (pp. 86–90). Fill in times or draw hands to the hour. Each copy becomes a new master from which to make student copies.

Can You Give Me a Hand?

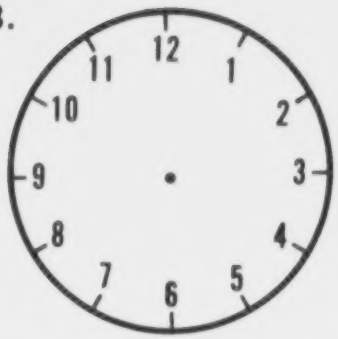
Show each given time.
Draw the hour hand on the clock.

1. 

Six o'clock

2. 

Three o'clock

3. 

Twelve o'clock

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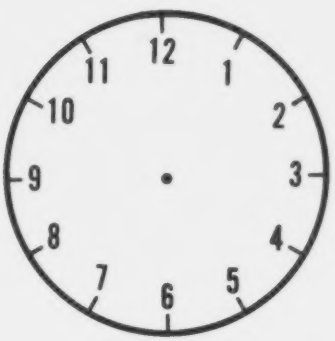
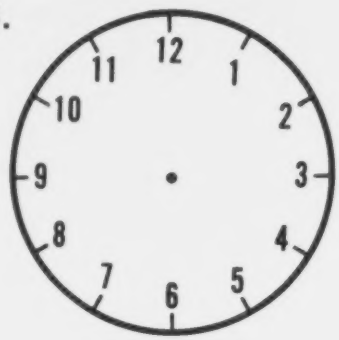
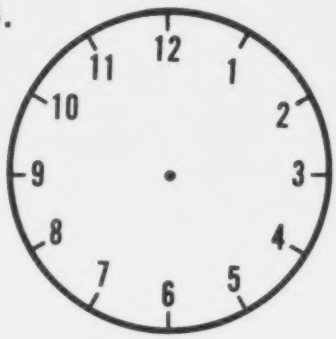
4. 

Two o'clock

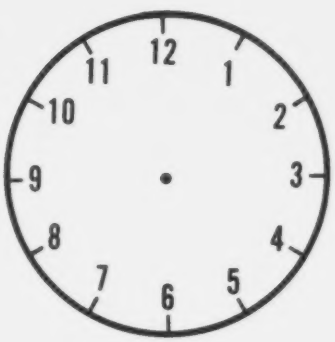
5. 

Nine o'clock

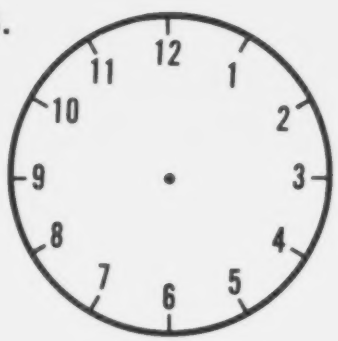
6. 

Five o'clock

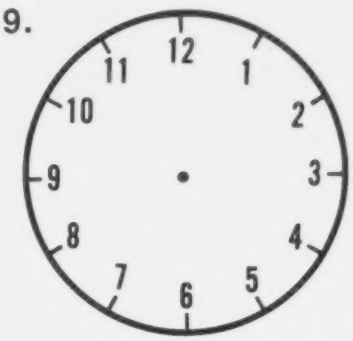
---

7. 

Eight o'clock

8. 

One o'clock

9. 

Eleven o'clock

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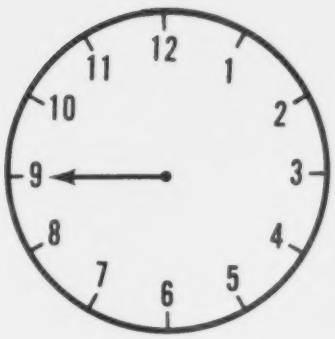
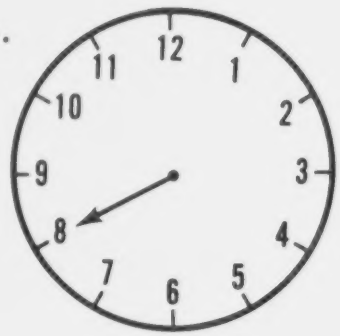
Make Them Match

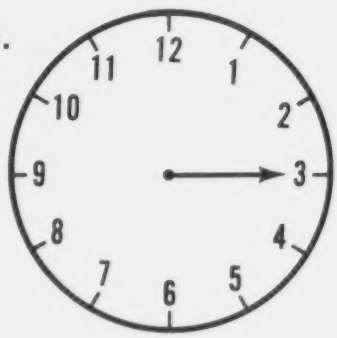
Match each clock to the correct time. Draw lines.
There will be two times left over.

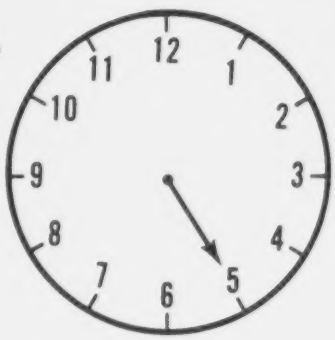
1.

2. 

3.

4. 

5. 

6. 

Eight o'clock
Twelve o'clock
Four o'clock
Nine o'clock
Eleven o'clock
Three o'clock
One o'clock
Five o'clock

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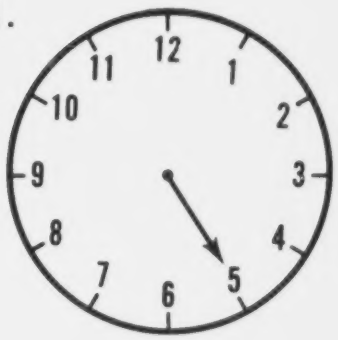
Time Is Passing By

Solve each problem. Draw a hand on the clock to show the new time. Write the new time. You may use your practice clock.

Time Now **New Time**

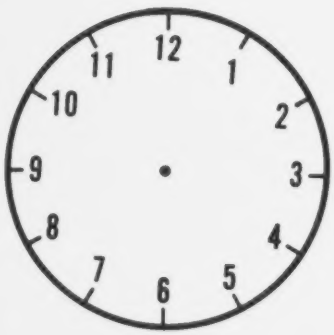
1.



A football game starts at five o'clock.

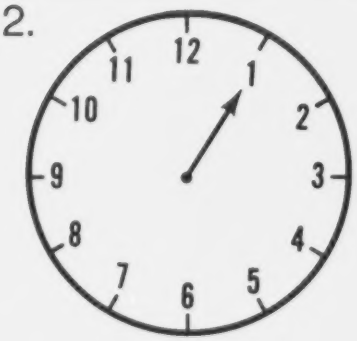
It lasts three hours.

At what time is the game over?



_____ o'clock

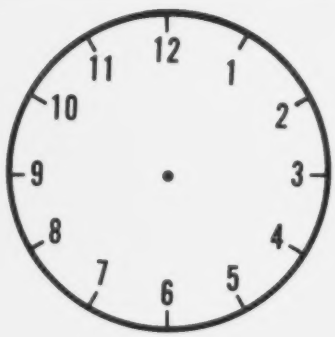
2.



The movie starts at one o'clock.

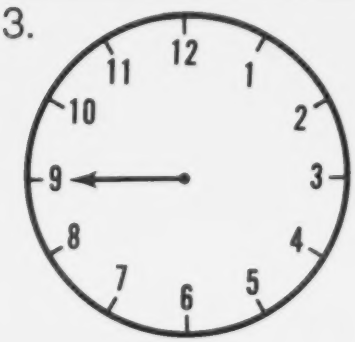
It lasts two hours.

At what time is the movie over?



_____ o'clock

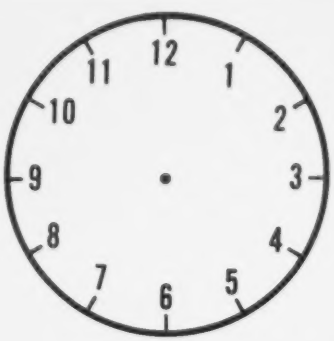
3.



School starts at nine o'clock.

School lasts six hours.

At what time is school out?



_____ o'clock

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Clock to Clock

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Complete the picture. Draw a line to connect the dots. Connect them in order from one o'clock to twelve o'clock. Hint: Time is important to this picture.

Unit 4
It's About That Time

Eventually students will learn how to tell time to the minute. With a one-handed clock, though, this is not possible. However, students can still learn about time "in between" the hour: even with the one-handed clock, the hour hand moves gradually from one number to the next over the course of an hour.

Actually, time is seldom indicated exactly to the hour. Therefore, it is useful to be able to express time in approximate terms. The activities and worksheets in this unit teach students to use the words "before," "after," "about," and "around" to describe approximate time. They also help students understand the gradual movement of the hour hand.

Activities

Introducing "Before" and "After" the Hour

Type of Activity: entire class
Materials: one-handed demonstration clock
Procedure: You may prefer to use an overhead transparency clock for demonstration purposes. If so, make a transparency of the clock face master on p. 13. (Any time a one-handed demonstration clock is called for in an activity in this book, you may substitute a transparency clock.)

a. Write several numbers in sequence on the chalkboard. Put your hand slightly before one of the numbers and then slightly after one of the numbers. Discuss the terms "before" and "after." Point out that your hand, when placed "before" one number, is also placed "after" the previous number. Draw a dotted line halfway between each pair of numbers. Explain that it is more sensible to use the terms "before" and "after" to refer to the number closest to the hour hand. That is, if the hand is between the four and the five but closer to the four, it makes more sense to say "after four." If the hand is closer to the five, it is more sensible to say "before five."
b. Draw a large clock on the chalkboard. Point directly to the twelve and say, "My hand is on the twelve. It's twelve o'clock." Now move your hand slightly to the left of the twelve and ask the class where it is now. (It's before the twelve. That means it's before twelve o'clock.) Move your hand slightly to the right of the twelve and ask the class to tell you the time. (It's after twelve o'clock.)
c. Using a demonstration clock, direct students to take turns showing you "before" and "after" times.

Introducing Approximate Time to the Hour

Type of Activity: entire class
Materials: one-handed demonstration clock
Procedure:

a. When your students understand "before" and "after," ask someone to display "about" four o'clock (or "around" four o'clock) on the demonstration clock. Explain that when we don't know whether the time is before or after the hour, or when it doesn't matter what the exact time is, we use the terms "about" or "around" to describe the time.
b. Direct students to display "about" times on the demonstration clock. When a student displays an approximate time as "before" the hour, ask another student to show a different way to give the same approximate time ("after" the hour).

Time to Listen

Type of Activity: entire class
Materials: student practice clocks constructed during the Unit 2 activity "Making a One-Handed Clock"
Procedure: Pose situations involving "before" and "after" times. Select students to show the approximate times on their practice clocks. Here

are two situations that can be used as examples.

The movie starts at three o'clock. (The student shows three o'clock.) I get there early, just as people are coming out of the theater from the earlier movie. What time is it? (The student shows "before" three o'clock.)

My doctor's appointment is at ten o'clock. I am a little late. What time do I get there? (The student shows "after" ten o'clock.)

Let Me Tell You About My Day

Type of Activity: individual
Materials: paper, crayons, pencils, stapler
Procedure: Give each student several sheets of paper. The students will make booklets that give an account of their daily activities, by approximate time. Each page shows one activity. Direct students to include the following information on each page:

- a drawing of a one-handed clock showing the time.
- a phrase telling the approximate time. (Example: about six o'clock.)
- a written description or an illustration of the activity. (Example: I eat dinner at about six o'clock.)

Students may also indicate whether the approximate time is "before" or "after" the hour. Suggest that students save one page for the booklet cover. Help each student staple together his or her pages into a booklet.

Match-Up Cards

Type of Activity: game for two to four players
Materials: "Match-Up Cards" blackline masters (pp. 30–32), tagboard, scissors
Procedure: Copy the cards onto tagboard. (Make a few sets of cards.) Cut apart the cards, bind each set with a rubber band, and place the sets in a special corner of the room for the students to use as a reinforcement game. You will have to explain the rules of the game to everyone beforehand.

a. One student in each group shuffles and deals the cards, face down, until all the cards are dealt out.

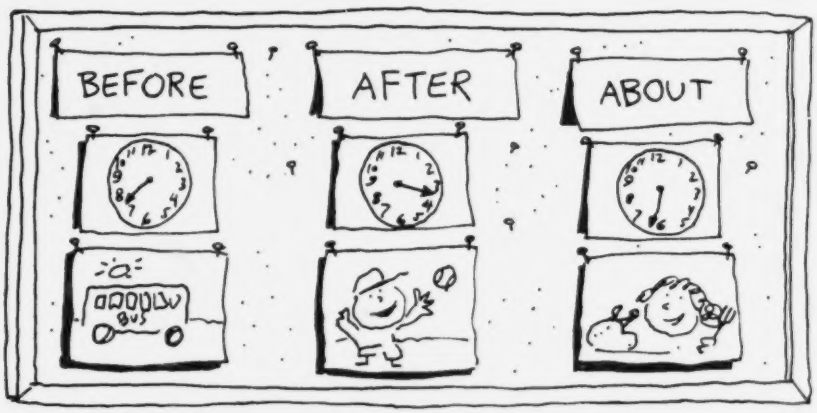
b. Each player looks at her or his own cards, matching up any pairs. A pair consists of a clock card and its matching written time. Each player must lay the pairs on the table, face up, so the other players may check the matched pairs. The remaining cards are held in each player's hand. Now the players are ready to begin.

c. The object of the game is to make as many matched pairs of cards as possible. (Step d below uses four players. Adapt this for groups of two or three players.) Player A draws a card from player B. If the card matches any of those in player A's hand, player A places the matched pair on the table. If it doesn't match, player A simply adds the card to his or her hand.

d. Player B takes a turn drawing a card from player C. Then player C draws from player D, and player D draws from player A. Play continues until each player goes out—that is, until each player has matched all the cards in her or his hand.

e. The player who is left holding the card that reads "Tommy Timeless" is automatically out. Of the remaining players, the one having the most matched pairs is the winner.

Bulletin Board Idea



Divide the bulletin board space into three sections, labeled "Before," "After," and "About." Examine the day's schedule for activities that begin before or after the hour (but not exactly on the half hour). Ask students to draw clocks to show each of these times, and to draw pictures to illustrate each activity. "About" times should be those that are flexible from day to day, beginning either before or after the hour. Display the students' clocks and pictures in the appropriate sections on the bulletin board.

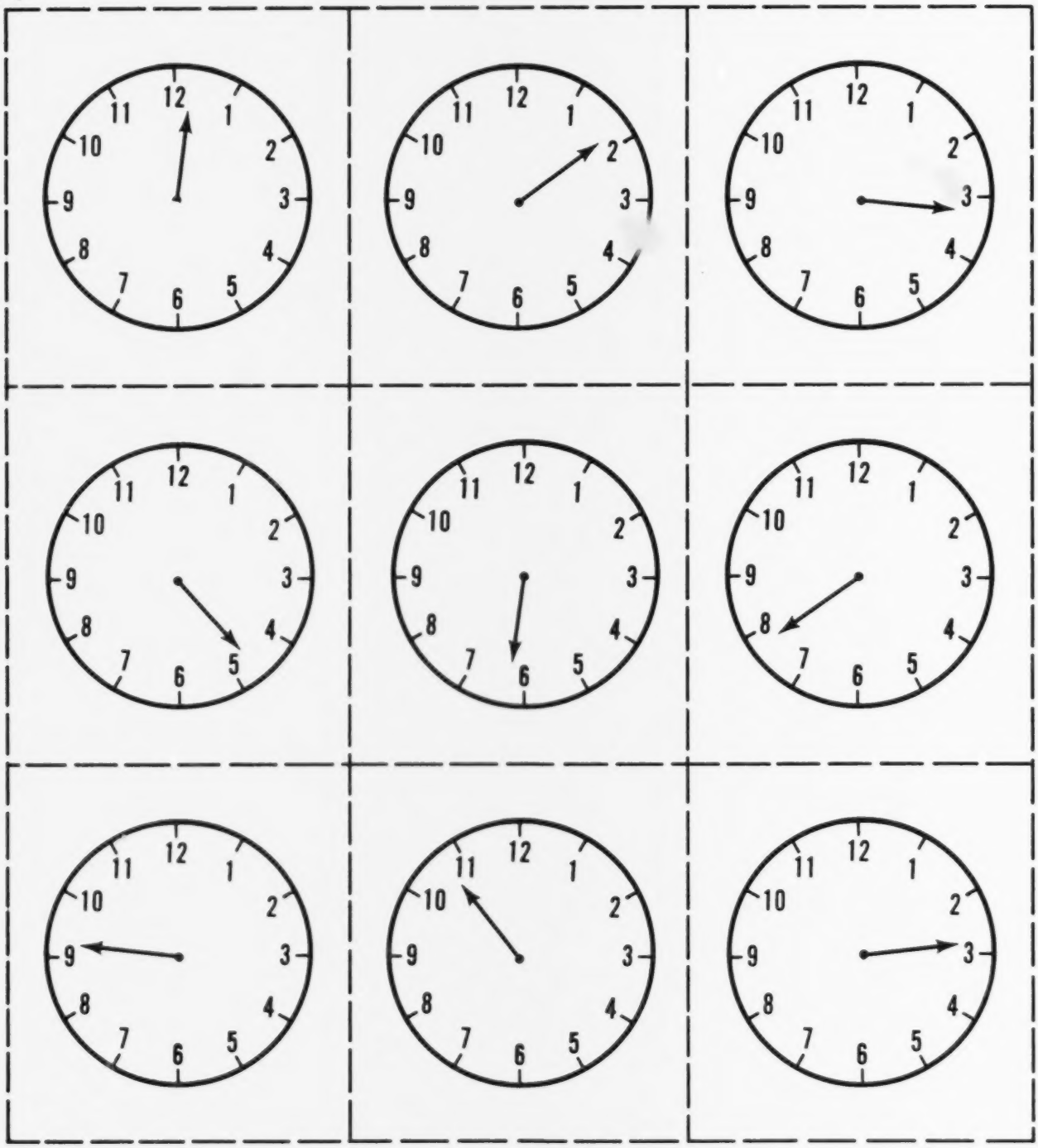
Worksheets

Assign the following worksheets to be completed independently. These worksheets help students learn to tell time before and after the hour.

Making Sense of "Before" and "After" the Hour (p. 33)
Write the Time (p. 34)
Time Tag (p. 35)
Magic Word (p. 36)

For additional worksheets, make one copy of each open-ended master (pp. 88, 90). Fill in times or draw hands "before" and "after" the hour. Each copy becomes a new master from which to make student copies.

Match-Up Cards



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Match-Up Cards

after Twelve o'clock	before Two o'clock	after Three o'clock
before Five o'clock	after Six o'clock	before Eight o'clock
after Nine o'clock	before Eleven o'clock	before Three o'clock

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Match-Up Cards

after
Five o'clock

after
Eight o'clock

before
Twelve
o'clock

before
One o'clock

Tommy
Timeless

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Making Sense of "Before" and "After" the Hour

Complete the sentence. Write **before** or **after**.
(Clue: Look at the position of the hand on each clock.)

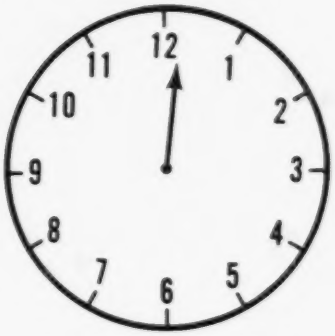
1.

I go to school _____
I wake up in the morning.

2.

I eat breakfast
_____ I eat lunch.

3.



It is best to brush your
teeth _____ you eat.

4.

I eat supper _____
I go to bed.

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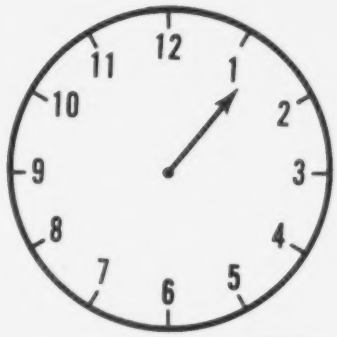
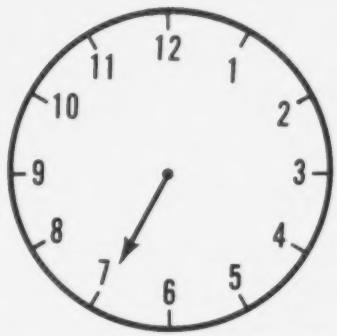
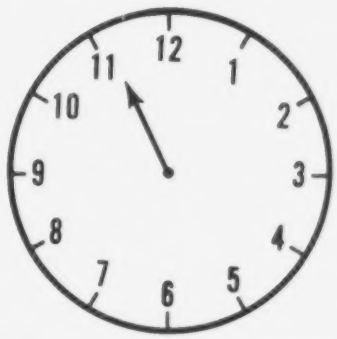
Write the Time

Look at each clock. Write the number to show the time. Use **before** or **after**. The first one is done for you.

before 10







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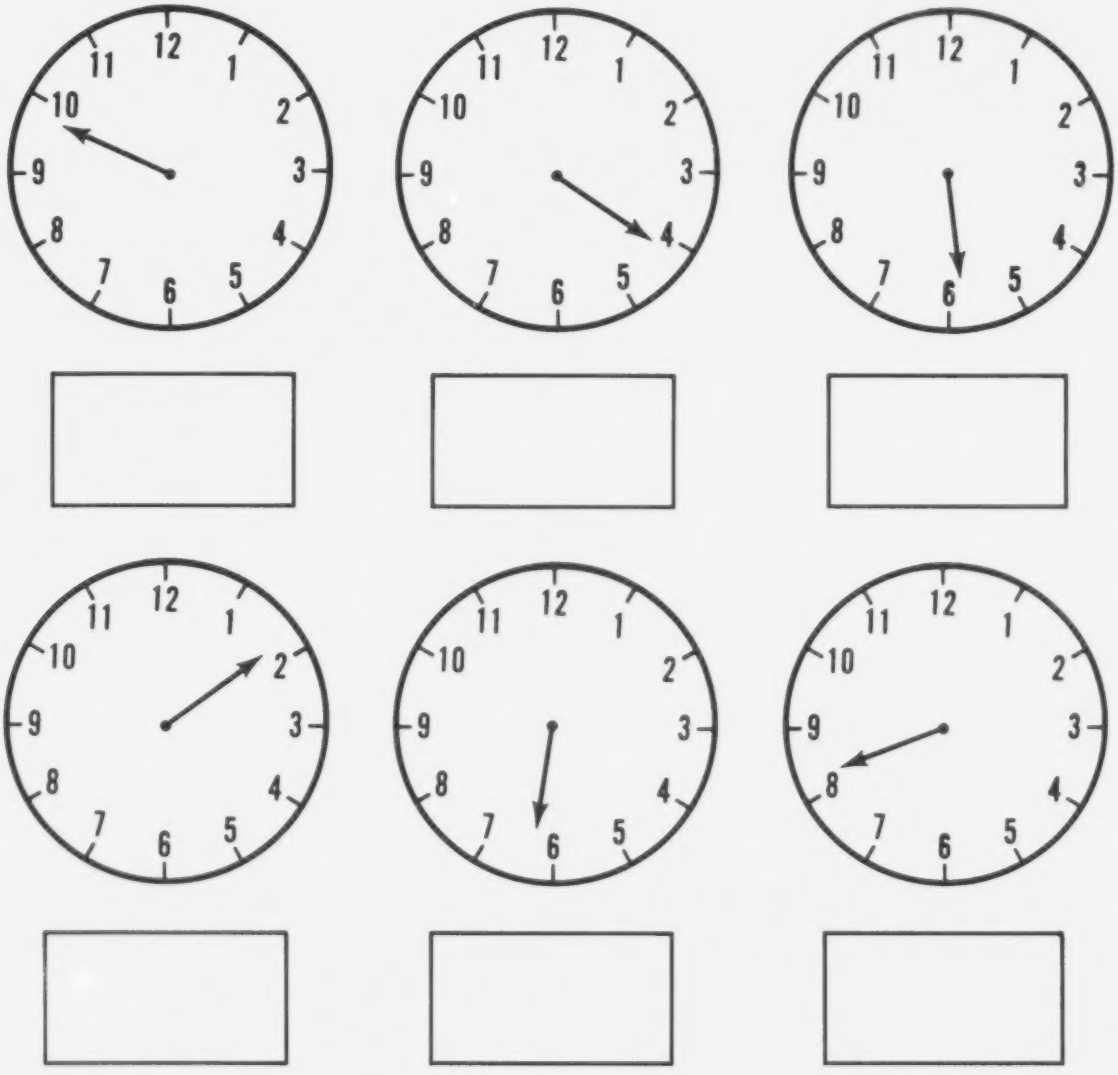
Time Tag

Cut out the tags below. Match each tag to the correct clock. Paste it in place. There will be three tags that do not match.



before 6	before 8	before 10	after 6	before 1	after 4	before 4	before 2	after 8

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Magic Word

Match each clock to the time it tells.
Draw a line to connect the dots.
Some of the clocks match more than one time.
When you are done, read the special word.

before 10

after 5

after 1

after 4

before 9

after 7

about 2

before 2

about 1

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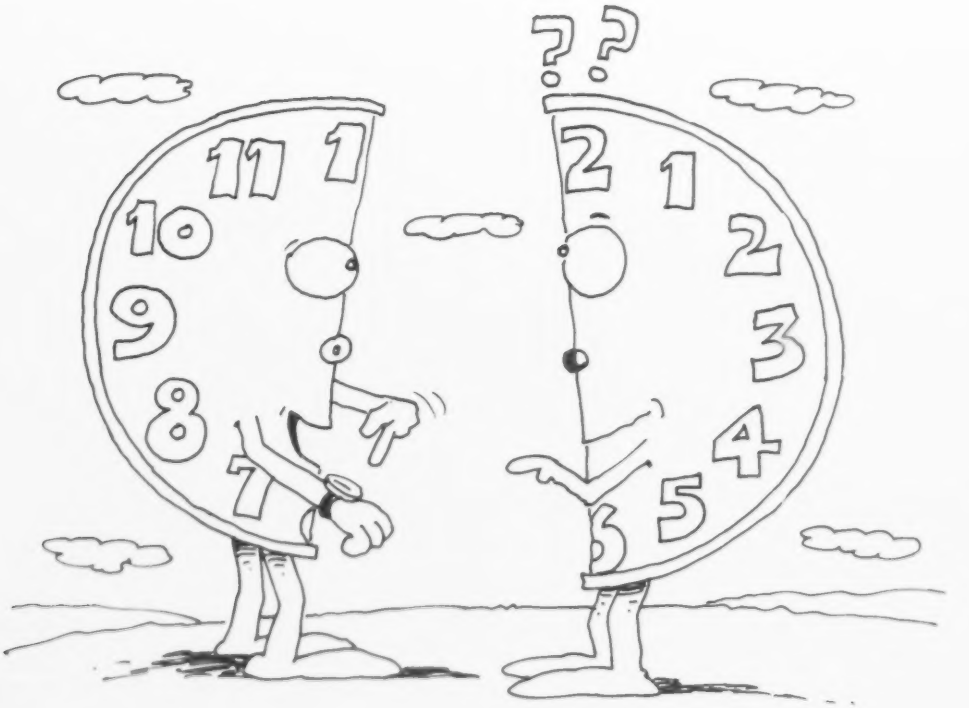
Unit 5
Do You "Half" the Time?



The story and activities in this unit introduce and reinforce the concept of a half hour. Even before students learn to tell time using a minute hand, they can tell time to the half hour. When the hour hand is exactly between two numbers, it is half past the hour. Learning the term "half past" refines the expression of "before" and "after." It also further helps students see the relationship between time and the distance the hour hand travels on a clock.

Mr. Half Comes to Help

Hi, I'm the one-handed clock. I heard that you now can tell time to the hour. I also heard that you know my two helpers, Before and After. Now I'd like to tell you about another helper of mine, Mr. Half.

Mr. Half first came to settle an argument between my two helpers Before and After. Most of the time it was easy to tell which of them to use. Take the numbers five and six, for example. If my hand was closer to the six, everybody would say "before six o'clock." If it was closer to the five, everybody would say "after five o'clock." But sometimes my hand would be *exactly* between the five and the six. Before and After would argue over which of them to use.

That is when Mr. Half came along. He had been pretty busy in other jobs. In fact, you have probably used him yourself. His main duty is to divide things into two equal parts. He might divide an apple, a bag of marbles, or a sandwich in half. If two people want to share something, Mr. Half helps out, dividing that thing in half for them to share.

At first, Mr. Half didn't want to help. How could he divide an hour in half? Why, you can't even see an hour! Finally I convinced him. I told him that he would work on my clock, in the spaces between the numbers. I explained that he would only have to help out when my hand was exactly halfway between two numbers. Then we could say the time was "half past" the hour. And then my two helpers Before and After would stop arguing.

When my hand is exactly between the twelve and the one, we say it is half past twelve. What if my hand is exactly between the one and the two? What time is it then? Can you name all the half-past times that a clock shows?

Activities

What Is Half an Hour?

Type of Activity: entire class
Materials: student practice clocks constructed during the Unit 2 activity "Making a One-Handed Clock"
Procedure:

a. Remind students that the space between two numbers on a clock stands for one hour. Explain that when the hand moves from the eight to the nine, for example, one hour has passed; when the hand moves halfway past the eight, a half hour has passed.

b. Name hour times and half-hour times. Ask the students to show each time on their practice clocks.

Earlier and Later

Type of Activity: entire class
Materials: one-handed demonstration clock, student practice clocks
Procedure:

a. Set the time on the demonstration clock to three o'clock. Ask a student to show how the clock will look in half an hour.

b. Set the time at half past six o'clock. Ask a student to show how the clock looked half an hour ago.

c. Continue setting the clock to hour and half-hour times, asking students to reset the clock to a time one half hour earlier or later.

d. The other students may follow along, setting their practice clocks to the times shown on the demonstration clock.

Time-Telling Teams

Type of Activity: entire class
Materials: one-handed demonstration clock
Procedure:

a. Divide the class into two teams. Line up the teams on opposite sides of the room.

b. The first player on team A names a time to the hour or half past the hour. If the time is shown correctly, team B earns a point. If the time shown is not correct, team A gets the point.

c. The second player on team A tells a time to the second player on team B. Play continues in this way until every player on team A has named a time and every player on team B has shown a time.

d. Now have the teams switch roles. Team B names times and team A displays the times on the clock. The team having the most points after these two rounds wins.

Variation: The players of one team show times on the clock. The players of the other team must read the times shown.

Time-O

Type of Activity: entire class
Materials: "Time-O" blackline masters (pp. 42–43), scissors. This game is played like "Bingo."

Procedure:

a. Give one copy of the "Time-O" page to each student.

b. Have students draw a hand on each

clock face on their "Time-O" sheets to show times to the hour or the half hour.

c. Cut apart the time tabs. Turn them face down on a table and mix them up.
d. Choose a student to be the caller. Have the caller turn a time tab up and read the time.
e. If a student's "Time-O" sheet shows the time called, she or he marks an "X" over the clock, showing that time.
f. The caller continues to call out times until one player has all nine spaces covered. This player must call out "Time-O." Have the caller check the player's times to make sure they truly match the times called.

Variation: Set up the game for students to play on their own in the learning center. Make four or more copies of the "Time-O" sheet. Draw a hand on each clock to show a different time, varying the time combinations. Mount the sheets on construction paper and laminate them. Make one copy of the time tabs on tagboard. Cut apart the cards. Place the tabs and the laminated "Time-O" sheets in a box. When students play the game, have them mark their clocks using water-soluble ink or use markers such as coins or buttons.

Time Trail

Type of Activity: game for two to four players

Materials: "Time Trail" game board (pp. 44–45), "Clock Face" blackline master (p. 13), file folder or poster board, tagboard, brad, markers such as coins or buttons, large envelope

Procedure: Make one copy of each Time Trail page and mount the pages edge to edge on the inside of a file folder or on poster board. Copy the clock face and spinner arrow onto tagboard. Cut them out and attach the spinner arrow to the clock face with a brad. Place the game board, the spinner, and the markers in the envelope, and mark it "Time Trail." Explain the rules of the game, and make the game available in a learning center.

a. Each player spins the clock hand. The player who spins the greatest number is first. Play continues in a clockwise direction.
b. The first player spins and reads the time as either "— o'clock," half past —," "after —," or "before —."
c. If the others agree that the player read the time correctly, the player moves his or her marker the number of spaces indicated by the spinner arrow. (For example, if the time is half past five, the player calls out the time and, after it is confirmed by the other players, she or he moves the marker five spaces.) If the player did not read the time correctly, that player may not move her or his marker.
d. Players continue taking turns spinning, reading the time, and moving their markers along the Time Trail. When players land on clocks, they must follow the directions on the clocks. The first player to land on "Finish" wins.

Time Together

Type of Activity: individual

Materials: "Time Together" blackline master (p. 46), lightweight cardboard, scissors, glue, envelopes

Procedure:

a. Make a few copies of the master. Mount each copy on cardboard, gluing the entire page.
b. Carefully cut apart the puzzle pieces. Store each set of puzzle pieces in an envelope.
c. As an independent activity, have students match each clock to the correct time. The puzzle makes this a self-checking activity.

Introducing Digital Time to the Half Hour

Type of Activity: entire class
Materials: one-handed demonstration clock
Procedure:

a. Review digital time to the hour.

b. Display a half-past time on the clock. Write the time in digital form on the chalkboard. Try this with several different times.

c. Students may wonder why ":30" signifies half past the hour. Explain that there are 60 minutes in an hour and that half of that amount of time is 30 minutes. Some students will not really understand the ":30" concept now, but most will accept it as another way to write and say time to the half hour.

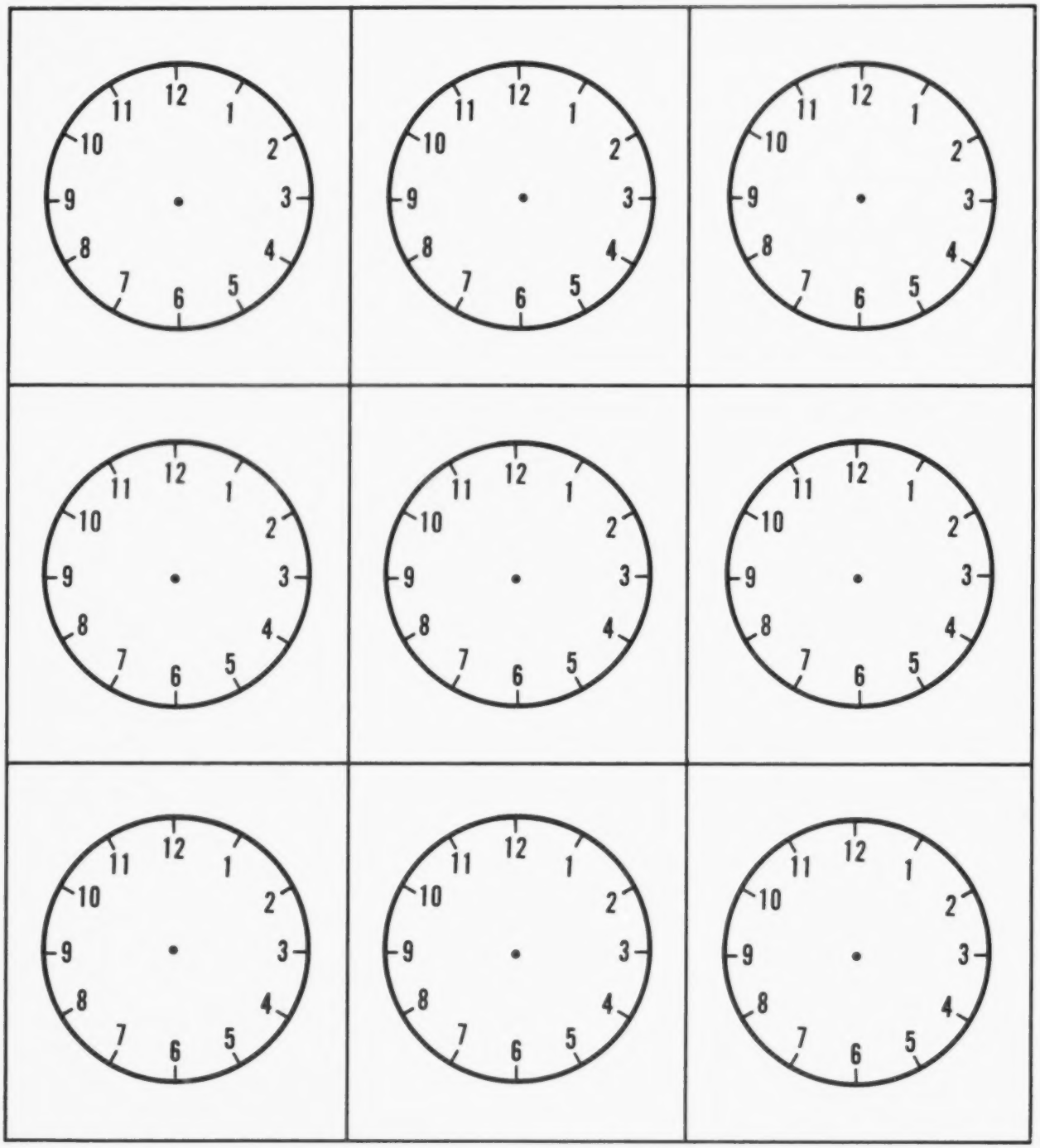
Worksheets

Assign the following worksheets to be completed independently. These worksheets help students tell time to the half hour.

Time Tag—Hour and Half Hour (p. 47)
Can You Give Me a Hand?—Hour and Half Hour (p. 48)
Write the Time—Hour and Half Hour (p. 49)
Time Is Passing By—Hour and Half Hour (p. 50)
Time for a Riddle—Hour and Half Hour (p. 51)
The Digital Watch (p. 52)

For additional worksheets, make one copy of each open-ended master (pp. 87–90). Fill in times or draw hands to the hour and to the half hour. Each copy becomes a new master from which to make student copies.

Time-O



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Time-O Time Tabs

12 o'clock	half past 12 o'clock	1 o'clock	half past 1 o'clock
2 o'clock	half past 2 o'clock	3 o'clock	half past 3 o'clock
4 o'clock	half past 4 o'clock	5 o'clock	half past 5 o'clock
6 o'clock	half past 6 o'clock	7 o'clock	half past 7 o'clock
8 o'clock	half past 8 o'clock	9 o'clock	half past 9 o'clock
10 o'clock	half past 10 o'clock	11 o'clock	half past 11 o'clock

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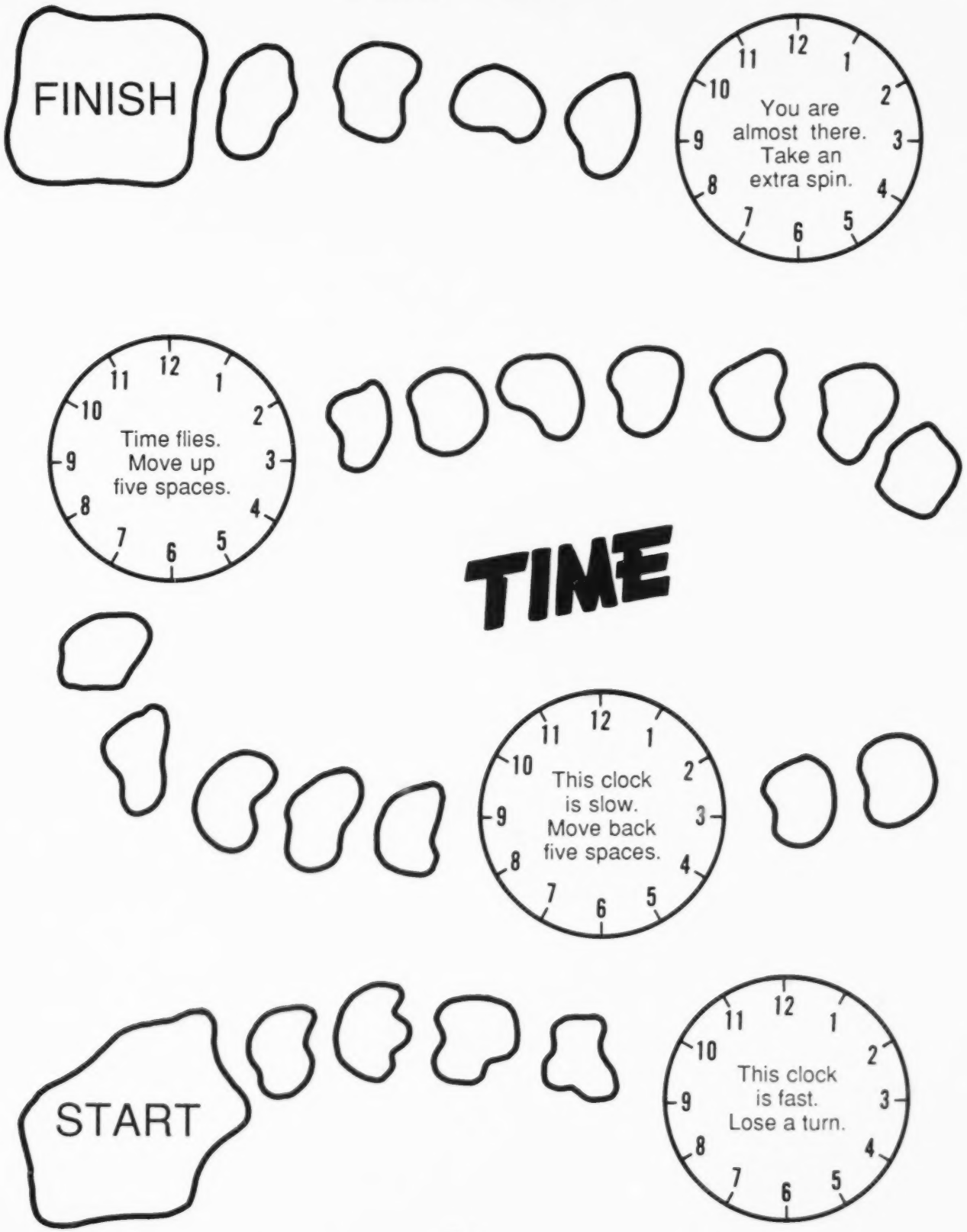
Time Trail A


FINISH
You are almost there. Take an extra spin.
Time flies. Move up five spaces.
TIME
This clock is slow. Move back five spaces.
START
This clock is fast. Lose a turn.

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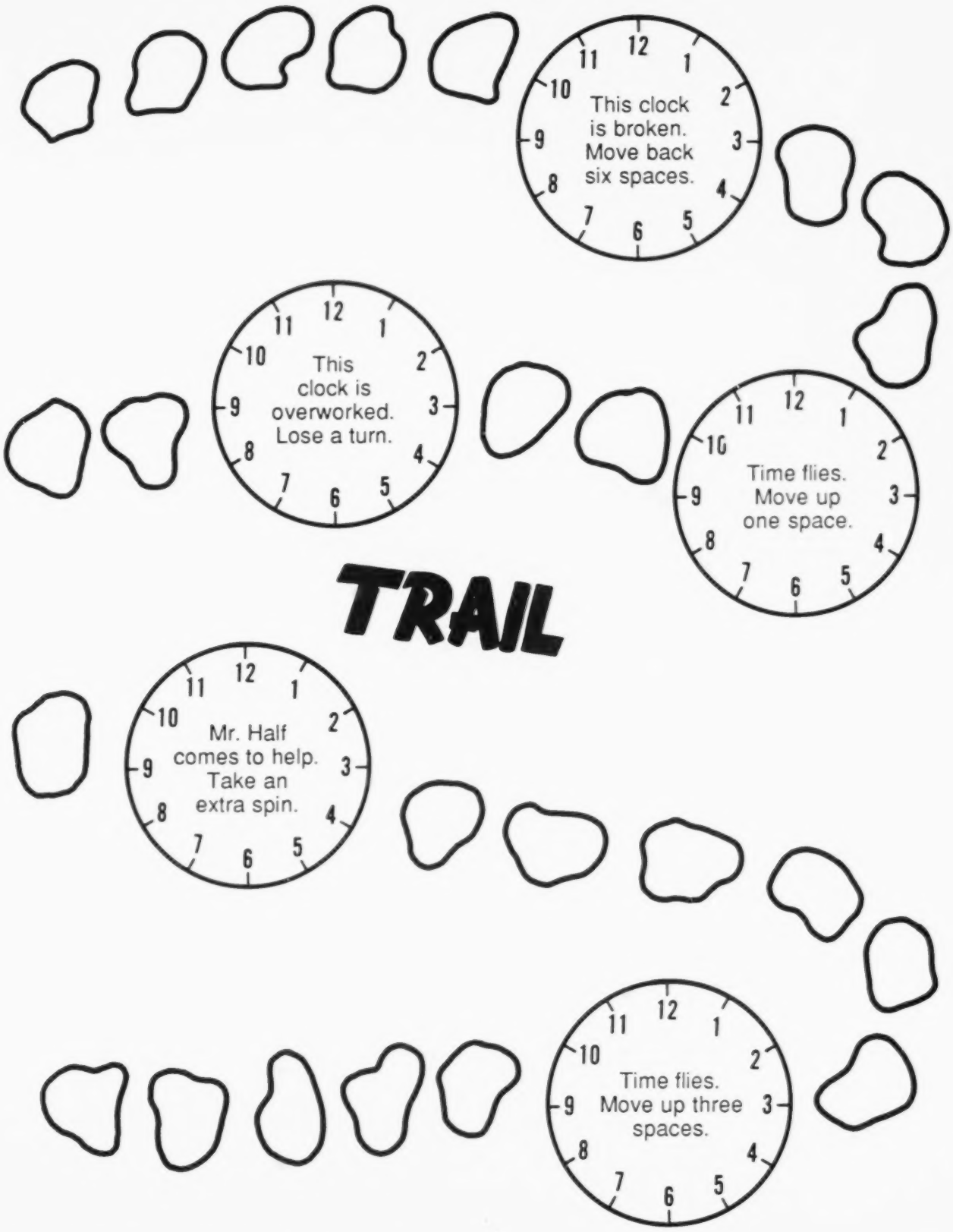
Time Trail B


This clock is broken. Move back six spaces.
This clock is overworked. Lose a turn.
Time flies. Move up one space.
TRAIL
Mr. Half comes to help. Take an extra spin.
Time flies. Move up three spaces.

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Time Together

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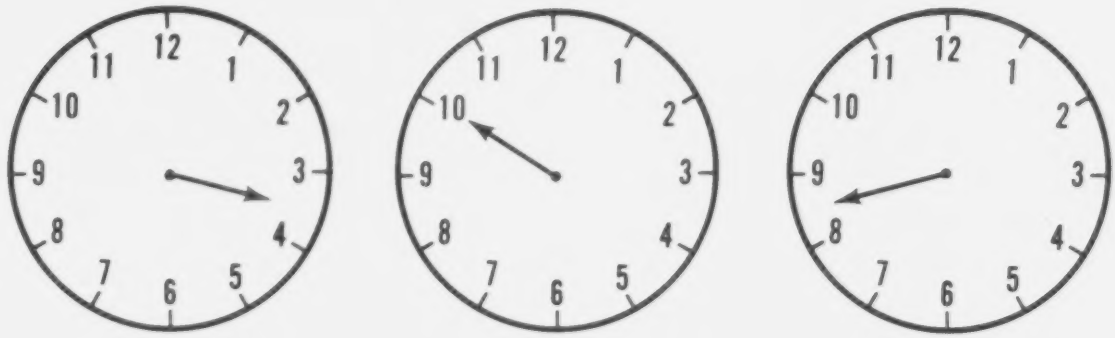
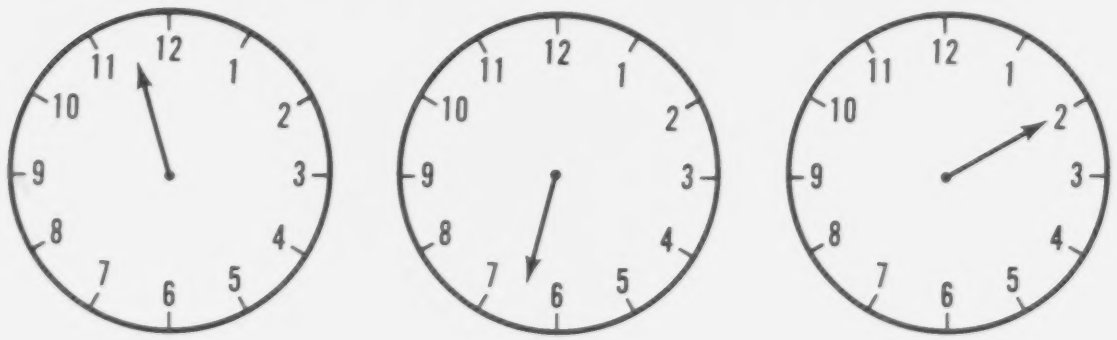
Time Tag—Hour and Half Hour

Cut out the tags below. Match each tag to the correct clock. Paste it in place. There will be three tags that do not match.





6 o'clock	half past 11	10 o'clock	half past 10	half past 3	2 o'clock	half past 6	half past 8	12 o'clock

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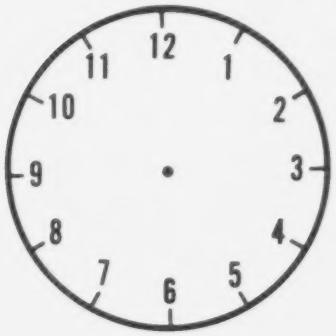
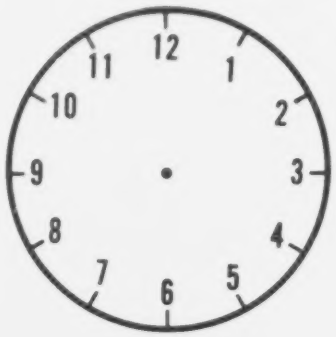
Can You Give Me a Hand?
Hour and Half Hour

Draw an hour hand on each clock.
Show the time given.

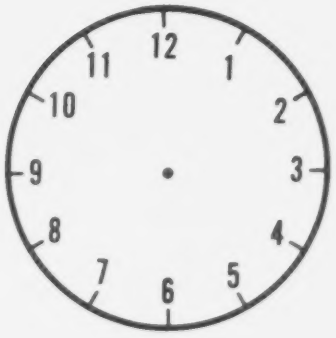


half past 9 o'clock

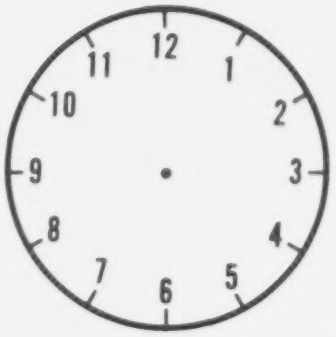


6 o'clock

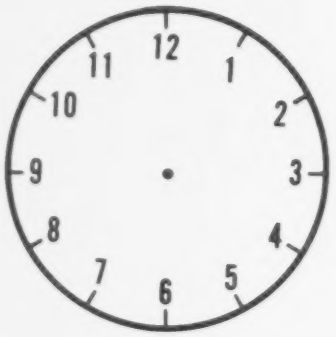
half past 7 o'clock



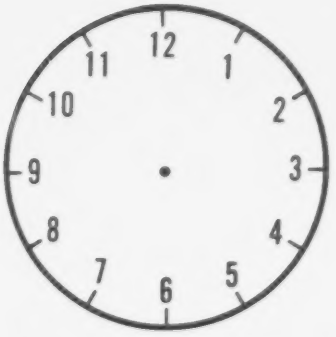
4 o'clock



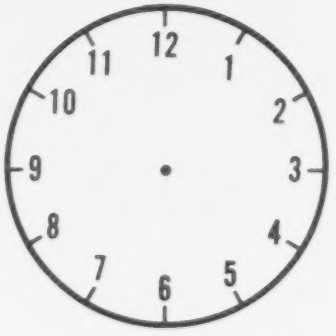
half past 3 o'clock



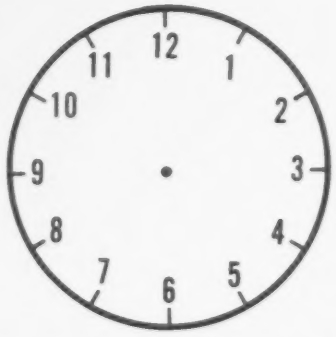
7 o'clock



half past 12 o'clock



2 o'clock



half past 1 o'clock

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Write the Time
Hour and Half Hour

Look at each clock. Write the time. Use half past and o'clock.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

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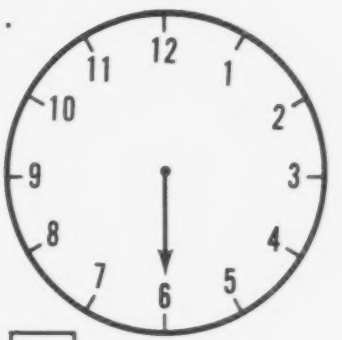
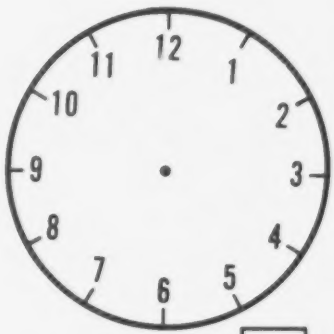
Time Is Passing By
Hour and Half Hour

Solve each problem. Write the time now. Draw a hand on the new clock to show the new time. Write the new time.

Time Now **New Time**

1. 

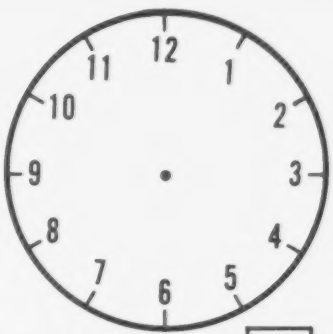
A half hour later:



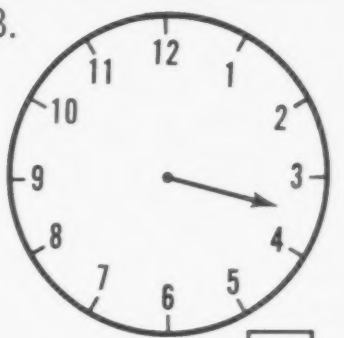
☐ o'clock ☐ half past

2.

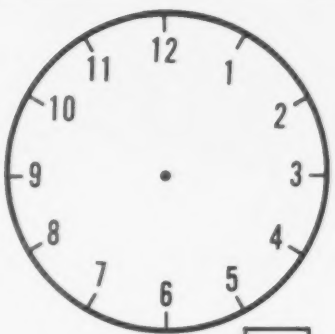
Two and a half hours later:



☐ o'clock ☐ half past

3. 

An hour later:



half past ☐ half past ☐

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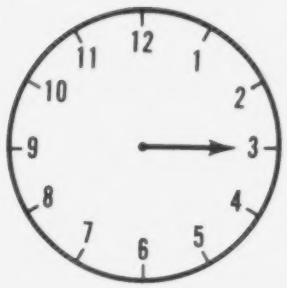
Time for a Riddle
Hour and Half Hour

Read the time on each clock. Find that time written below. Write the letter of the clock above the written time. When you finish you will have the answer to this riddle:

What do we call clocks that run many years?

T 

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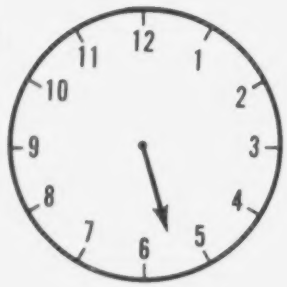
D 

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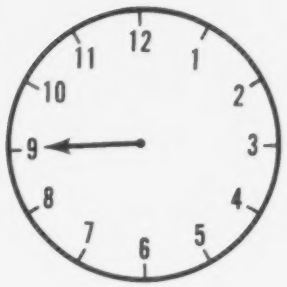
L 

M

R

_

half past 10	9 o'clock	half past 5	3 o'clock	half past 6	half past 4	12 o'clock	half past 8	2 o'clock

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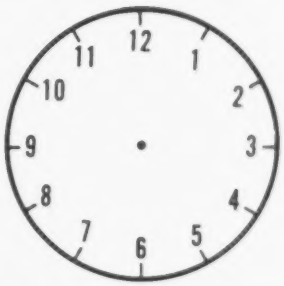
The Digital Watch

Look at each digital watch. Write the time.
Show the time on the clock face.
Draw the hour hand.

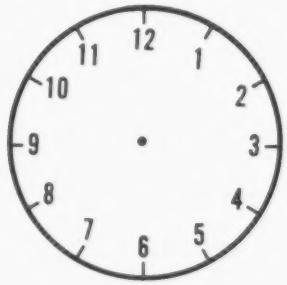
1.

half past _____



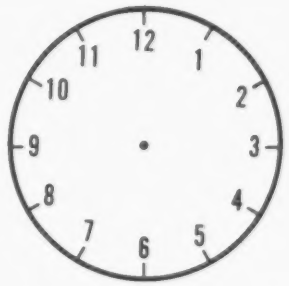
2.

half past _____



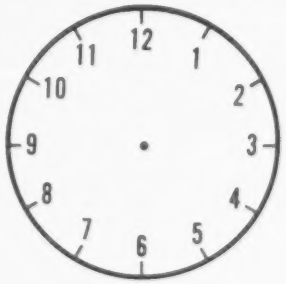
3.

half past _____



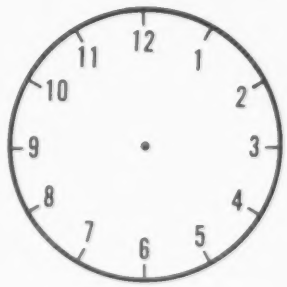
4.

half past _____



5.

half past _____



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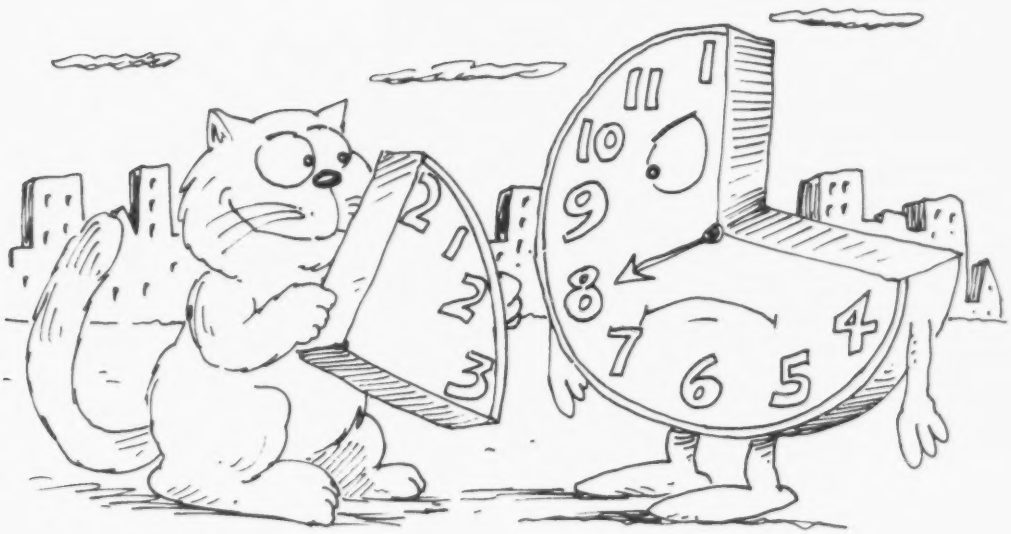
Unit 6
Anybody Got a Quarter?



The final step in reading a one-handed clock involves telling time to the quarter hour. This skill, with a clock that has no minute hand, is a refinement of telling time "before" and "after" the hour and to the half hour. The activities and worksheets in this unit help students tell time to the quarter hour.

In order to proceed with this unit, students must have the skill to distinguish one-fourth the distance between two numbers on a clock. If students do not have this skill, you may wish to proceed with Unit 7 and return to this unit at a later time. It is not necessary to read a one-handed clock to the quarter hour before making the transition to a two-handed clock.

Activities

What Is a Quarter?

Type of Activity: entire class
Materials: construction paper, scissors
Procedure:

a. Ask the students to tell you how many quarters are in a dollar. Explain that "quarter" means one-fourth.

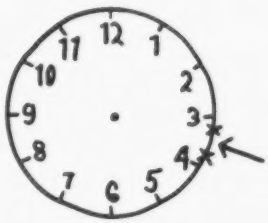
b. Cut a strip of construction paper about twelve by three inches. Fold the strip in half to create a six- by three-inch strip. Then fold it in half again. Now open the strip and show the four sections. Explain that each section is one of four, or one quarter of the whole. Also explain that one-fourth is "half of half."

Step b.

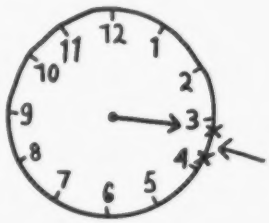
c. Have students practice folding paper strips into fourths.

d. Draw a large clock face on the chalkboard. Ask a student to draw an arrow at the halfway point between two numbers (the three and the four, for example). Ask another student to mark the halfway points between each number and the arrow. Explain that the space between the two numbers is now divided into fourths.

e. Draw an hour hand pointing to the first quarter-past mark. Explain that this point represents a quarter past the hour. Ask students to express this in other terms ("after" the hour).



Step d.



Step e.

f. Erase the hour hand and draw another one pointing to the arrow (at two quarters past the hour). Ask students to express this time (half past the hour).

g. Erase the hour hand and draw another one pointing to the next quarter mark. Explain that this is expressed as "quarter to" the hour. Ask for another expression of this time ("before" the hour). Remind the students that we refer to the number closest to the hour hand, which is why we say "quarter to" rather than "three-quarters past."

Mark Those Quarters

Type of Activity: entire class or individual
Materials: "Clock Face" blackline master (p. 13), crayons
Procedure:

a. Give each student a copy of the clock face.

b. Ask students to mark their clock faces by drawing a line at each place that signifies half past the hour. Students should use a light colored crayon (such as yellow) for this step.

c. Then ask them to draw an arrow at each place that signifies quarter to or quarter past the hour. Students should use a bright colored crayon (such as red or orange) for this step.

Step c.

Quarter for a Question

Type of Activity: entire class/small group
Materials: student practice clocks constructed during the Unit 2 activity "Making a One-Handed Clock"
Procedure:

a. Name times to the quarter hour—quarter past the hour and quarter to the hour. Ask students to display the times you name.

b. Divide the class into small groups and have students continue displaying times to the quarter hour.

How Long Is a Quarter Hour?

Type of Activity: entire class or small group
Procedure: During the course of the day, give the class (or each group) an assignment that will take a quarter hour to complete. Set recess, free time, and games or activities for a quarter hour. Ask students to see what they can accomplish in a quarter hour. Signal the times when the quarter hour begins and ends. Suggest the following tasks to try.

- How many words can you write in a quarter hour?
- How many math problems can you work in a quarter hour?
- How many students can be served lunch in a quarter hour?
- How many rounds of a given game can be played in a quarter hour?

You may wish to discuss duration of time again. Have students list the activities during which a quarter hour seems to pass quickly and activities during which the quarter hour seems to drag by.

Pick a Pair of Quarters

Type of Activity: game for two to four players
Materials: "Pick a Pair of Quarters" blackline masters (pp. 57–58), tagboard, scissors, envelopes
Procedure: Make a few copies of the masters on tagboard, and cut apart the cards. Store each set of cards in an envelope, and place the envelopes in the learning center. Explain the rules of the game to the students so they may play independently.

a. One player deals out all clock cards. Each player lines up her or his cards, face up.

b. The dealer places the time cards face down in a stack.

c. The first player (the person sitting to the dealer's left) draws the top card from the stack of time cards. If it matches one of that player's clock cards, the student places the pair aside. If it doesn't match, the player discards the time card in a discard pile face up. Once the discard pile is formed, the next player has the option of choosing the top card in the discard pile (if it matches one of that player's clock cards) instead of drawing the top card from the stack of time cards.

d. Play continues clockwise until one player has matched all of his or her clock cards. This player is the winner. (If players run out of time cards before all the clock cards are matched, the player having the most matched cards wins.)

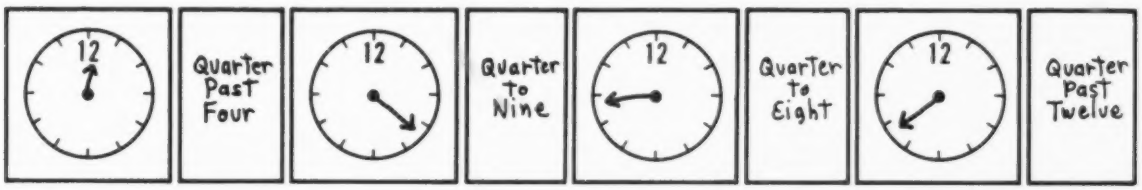
Variation: These cards may be used for the game of "Concentration."

Time Train

Type of Activity: independent
Materials: "Time Train" blackline masters (pp. 59–60), tagboard, scissors, envelopes
Procedure:

a. Make a couple of copies of the time train cards on tagboard. Cut apart the cards along the broken lines only. Store each set of cards in an envelope for students to play with on their own in a learning center.

b. The student lines up the twelve cards, matching the time on one card with the clock placed next to that card. The clock on the far left of the time train will match the time on the far right of the train.



Worksheets

Assign the following worksheets to be completed independently. These worksheets help students learn quarter to and quarter past the hour.

Quarter Past (p. 61)
Quarter To (p. 62)
Making Sense of the Quarter Hour (p. 63)
Write the Time to the Quarter Hour (p. 64)

Pick a Pair of Quarters

quarter past twelve	quarter to two	quarter past three
quarter to five	quarter past five	quarter to seven
quarter past eight	quarter to ten	quarter past eleven
quarter to three	quarter past four	quarter past six

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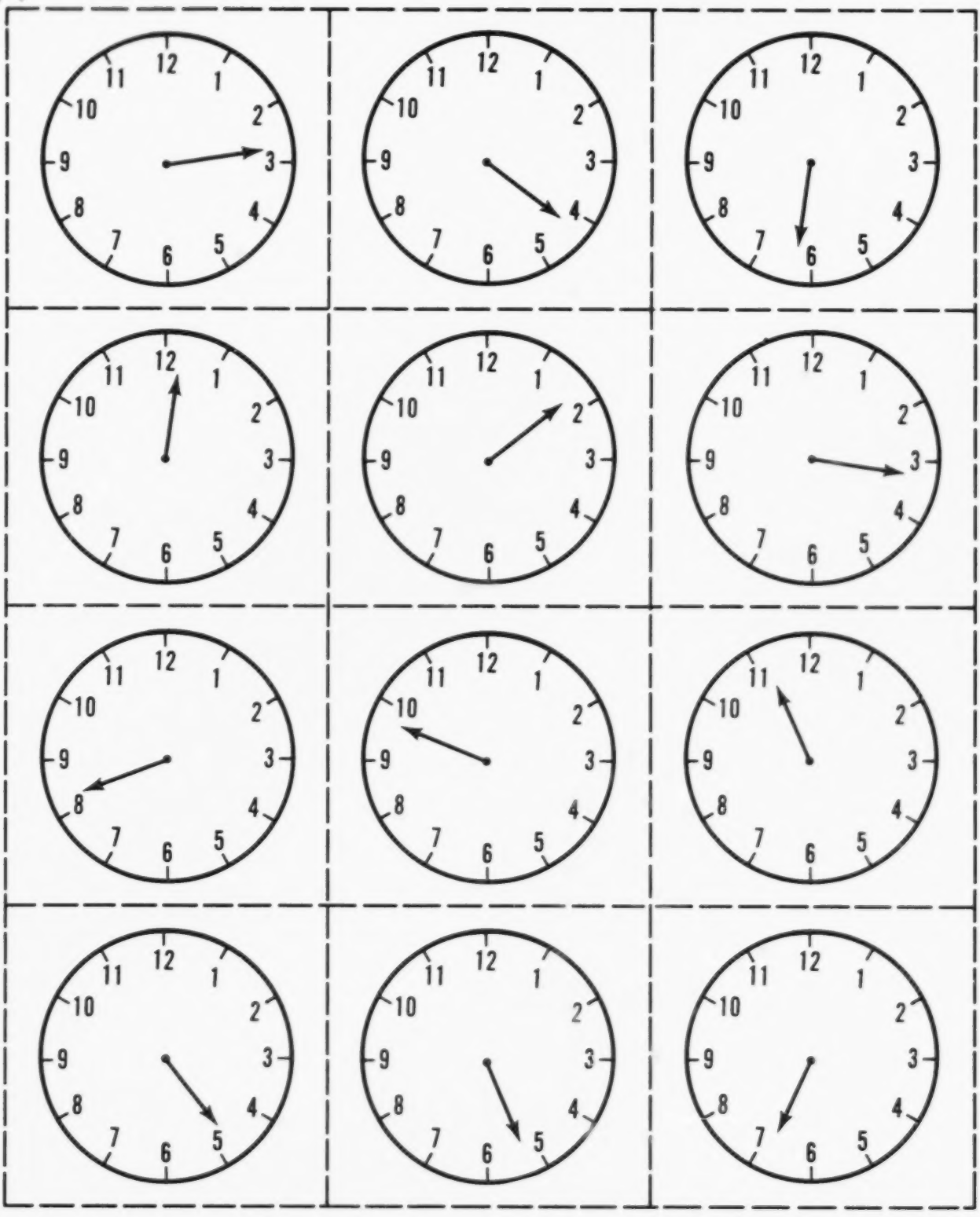
Pick a Pair of Quarters



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Time Train

Time Train

quarter past one

quarter to three

quarter to six

quarter past nine

quarter to eleven

quarter to four

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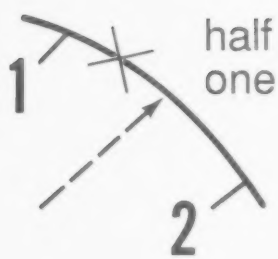
Quarter Past

Mark an X at each point where the hour hand shows quarter past the hour. You will mark 11 places on the clock: quarter past one, quarter past two, and so on. Quarter past twelve is done for you.



half past
one o'clock

To find quarter past the hour:
Mark the halfway point between two numbers. Find half of the first half.

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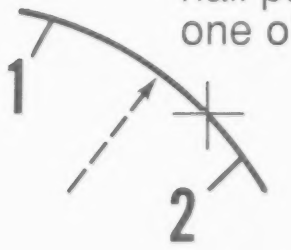
Quarter To

Mark an X at each point where the hour hand shows quarter to the hour. You will mark 11 places on the clock: quarter to two, quarter to three, and so on. Quarter to one is done for you.



half past
one o'clock

To find quarter to the hour:
Mark the halfway point between two numbers. Find half of the second half.

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Making Sense of the Quarter Hour

Circle the correct word (**past** or **to**) that shows the time on the clock. Then write the word you circled. Does the sentence make sense?

1.

quarter (past, to) six

To buy milk, I go _____the store.

2.

quarter (past, to) nine

As the train went _____ it blew its whistle.

3.

quarter (past, to) three

I went to bed late. A special TV show went _____ my bedtime.

4.

quarter (past, to) one

We walk _____ the lunchroom to eat our lunch.

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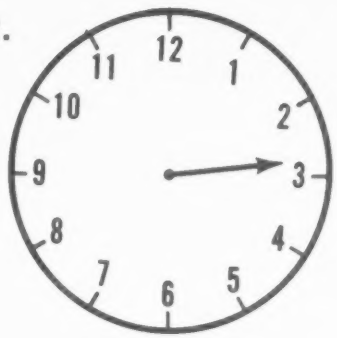
Write the Time to the Quarter Hour

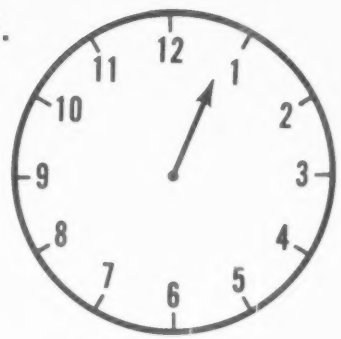
Complete each time. Write **to** or **past**.

1.

quarter _____ 6

2. 

quarter ____ 3

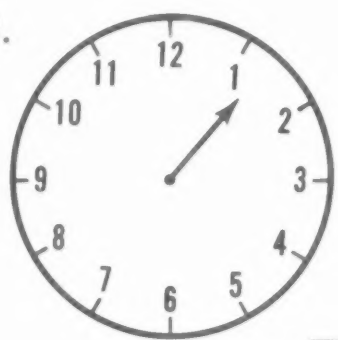
3. 

quarter ____ 1

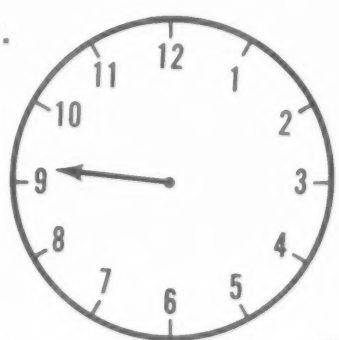
Complete each time. Write **to** or **past**.
Write the hour number.

4.

quarter to 5

5. 

quarter _____ ☐

6. 

quarter _____ ☐

7.

quarter _____ ☐

8.

quarter _____ ☐

9.

quarter _____ ☐

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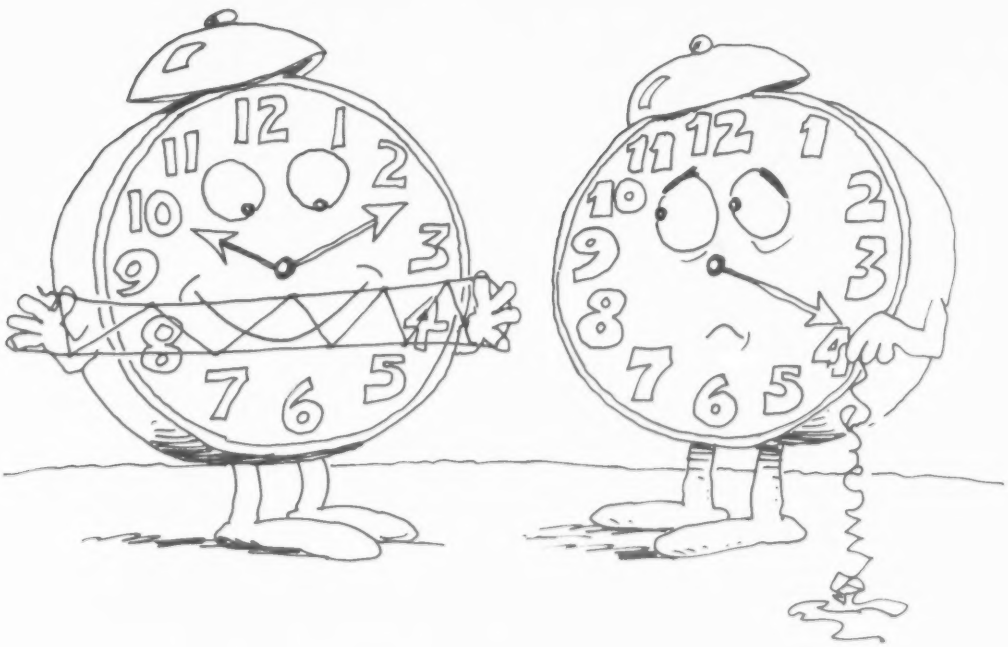
Unit 7
Two Hands Are Better Than One



This unit is an introduction to the minute hand. It is designed to help students make the transition from a one-handed clock to a clock having both hour and minute hands. Students will learn the role of the minute hand and its relationship to the hour hand. When you read the story at the beginning of the unit to your students, you may wish to use a demonstration clock to show how the hour and minute hands work together.

Mighty Mike Lends a Hand

I knew the day would come when people would tell me, "You're OK, one-handed clock, but you're just not good enough." They told me, "We need a better clock, one that is more exact. You can tell time to the hour. You can tell time before and after the hour. And you can tell time when it is half past the hour, quarter past the hour, or quarter to the hour. But there are a lot of times you cannot tell. You need help!"

I was working as hard as I could, and so were all my little helpers, Before, After, and Mr. Half. But I knew that people were right. We still needed help. So I called together my helpers, hoping we could solve the problem.

"Let's face it," said Before, "you only have an hour hand. You have to show minutes, too."

"But there are 60 minutes in an hour," said After. "How can you show minutes on your clock?"

Everybody thought for a while. Then Mr. Half exclaimed, "What we need is two clocks in one!"

"What do you mean?" I asked. "How can I be two clocks in one?"

"Simple," answered Mr. Half. "All you need is a little remodeling, like a house. Sometimes people need a larger house, so they add a room. Well, we need a better clock, so we'll just add a new part."

"I don't know if I like this idea," I muttered. Nobody knew what Mr. Half had in mind. We listened, and soon his plan began to make sense.

Mr. Half explained, "You see, you must become an hour clock and a minute clock at the same time. As an hour clock, the space between two numbers that are next to each other stands for an hour. As a minute clock, the space between those same numbers stands for five minutes."

"How can I do both jobs, though?" I asked.

"What we need is a new hand—a minute hand," suggested After. "The minute hand can show the 'minute clock' time while your hour hand shows the hour time."

"Yes," said Mr. Half. "The hour hand keeps on doing what it's been doing, moving slowly from hour to hour. The minute hand will have to move very fast. It'll have to go all the way around the clock to show one hour. That means it will go around the clock 12 times for every one time the hour hand goes around."

"That means the new minute hand will have to be strong and fast," said After. "It must have lots of energy."

"I know just the helper!" cried Before. "His name is Mighty Mike. I met him at the carnival. He used to run the ferris wheel. He loves to go around in circles very fast."

We all went looking for Mighty Mike. Luckily, we found him, and he said he'd give the job a try. The first few hours were frustrating. We had to learn to work together. When we want to show time to the hour, my hour hand points straight to a number and Mighty Mike the minute hand points to the twelve. When we want to show half past the hour, my hour hand points halfway between two numbers and Mighty Mike points to the six. That is because he is halfway around the hour. At quarter past the hour, Mighty Mike goes a quarter of the way around the clock and points to the number three. And at quarter to the hour, Mighty Mike goes three-quarters of the way around the clock, pointing to the number nine.

I'm a two-handed clock now. I have a minute hand to show the minute, and an hour hand to show the hour. The hands work together smoothly. Now you know how we work.

Activities

Counting a Minute

Type of Activity: entire class
Materials: a large standard clock with minute marks and a second hand
Procedure: Ask students to watch the second hand move swiftly around the clock. Then ask them to count softly from one to sixty, saying one number each time the second hand passes a minute mark. Students will need lots of practice before they can accurately count out one minute without looking at the clock.

Estimating a Minute

Type of Activity: entire class
Materials: minute timer
Procedure: Cover all clocks in the classroom. Begin the one-minute timer, signaling to the students. Hide the timer from view. Have students sit quietly, counting to themselves or otherwise estimating when a minute has passed. Direct students to stand when they think a minute is up. Indicate to students when a minute has passed.

A Minute at the Board

Type of Activity: entire class
Procedure: Have one or two students stand at the chalkboard with chalk in hand. Give those students one minute to write their names as many times as possible. Say "go" when the second hand of the class clock reaches the twelve, and call out when a minute is up. Give each student a turn at the chalkboard. For variety, have them write numbers, other words, or short sentences instead of their names.

In One Minute I Can . . .

Type of Activity: individual or pairs of students
Materials: "In One Minute I Can . . ." blackline master (p. 76), pencils, one-minute timer
Procedure: Give each student a copy of the worksheet. Have students work independently or in pairs to complete the worksheet, using a one-minute timer. Encourage students to add items to the list and then to time themselves with those tasks. If students work in pairs, they may time each other using a digital clock or by watching the second hand on a standard clock.

How Many Minutes?

Type of Activity: pairs of students
Materials: "How Many Minutes?" blackline master (p. 77), pencils, digital clock or standard clock
Procedure: Have students work in pairs. Give each pair of students a copy of the worksheet to complete. Encourage them to add items to the list and time those items as well. Students may refer to a digital clock or a standard clock, watching the second hand.

Time for Me

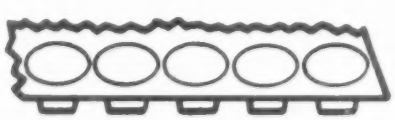
Type of Activity: individual
Materials: "Time for Me" blackline master (p. 78), pencils, crayons
Procedure: This is an open-ended activity that may be approached in one of several ways, or repeated through the school year.

a. Give one copy of the master to each student. Allow students to choose any time of the day to write about. Have them read the directions and complete the page on their own, if possible. Compile the pages into a class booklet about time.
b. Students may compile their own individual booklets by completing several pages about different times of the day. Extend the activity over several days or weeks so that the pages will reflect students' broadening time-telling skills.
c. Each student may complete the page as a homework assignment. If necessary, students may dictate the story for an adult or older child to write.
d. Students may draw one-handed or two-handed clocks, depending on their level of time-telling skills.

Minutes on a Bean Clock

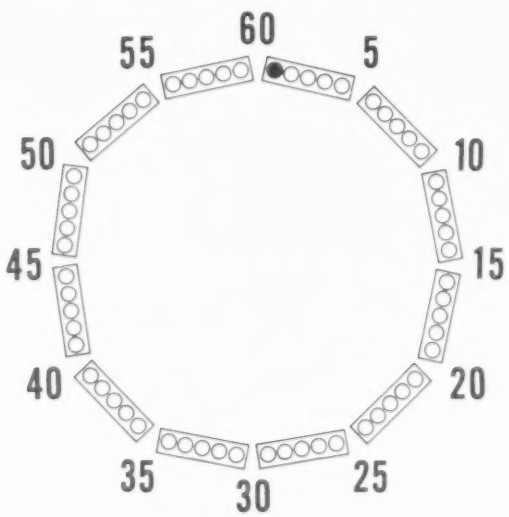
Type of Activity: entire class or small group
Materials: six empty egg cartons, each with twelve "pockets"; scissors; a colored marker; a large sheet of butcher paper; a large, wide-mouth plastic container filled with dried beans (at least 720 beans)
Procedure: The purpose of this activity is to show the students how the passing of minutes is represented by the minute hand and the minute clock. You can use the bean clock to demonstrate how a real clock works. The bean clock does not have to reflect the actual passing of time. Be sure to mention this to the class, and make sure students understand the real duration of one minute.

a. Cut the egg cartons apart into rows of five "pockets." Discard the extra pockets. Altogether, you will need twelve sections, each having five pockets in a row.



Step a.

b. Arrange the sections roughly in a circle on top of the butcher paper. Color the inside bottom of the first pocket.
c. After each section, write the five-minute interval number on the butcher paper, as indicated in the illustration below.



Steps b. and c.

d. Set the container of dried beans next to the clock.
e. Drop a bean in the first pocket of the first egg carton section. (The first pocket is indicated by the colored inside bottom.) This stands for the passing of a minute. Then drop a bean in the second pocket, and so on. Continue until all the pockets

have been filled with one bean each (in order and in a clockwise direction).

f. Explain that the activity represents the passing of one hour.

g. Assign this activity to individuals and small groups of students who need hands-on experience to understand the hour-minute relationship. Students should time each minute using a one-minute timer, and then place a bean. (Students need not complete an entire hour on the bean clock.)

Hours and Minutes on the Bean Clock

Type of Activity: entire class or small group

Materials: bean clock, twelve clear plastic cups, marking pen, jug of beans

Procedure: On another day, set up the bean clock to show the relationship between minutes and hours. This activity may also indicate actual time or may be "speeded up."

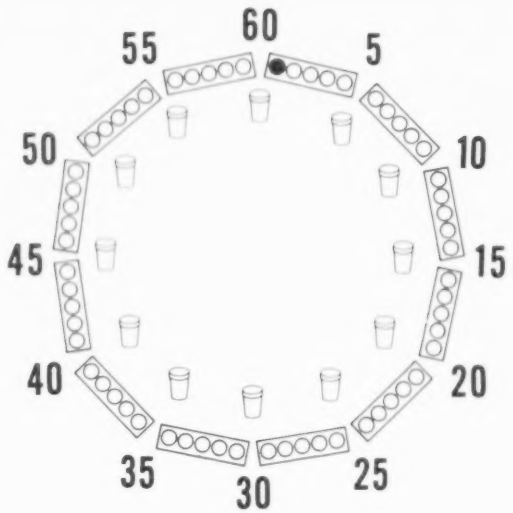
a. Place one cup at each five-minute interval on the inside of the clock. Number the cups consecutively from 1 to 12. (If necessary, put a piece of masking tape on each cup, and write the number on the tape.)

b. Draw a line from each five-minute interval to the cup nearby.

c. Fill the egg carton pockets with beans, as described in the activity above.

d. When all 60 pockets are filled, gather the 60 beans, place them in the cup labeled "1," and call out the time (one o'clock).

e. Fill up the pockets of the bean clock again to indicate minute time. After you have placed the 60th bean in its pocket, gather all the beans from the pockets, place them in the cup labeled "2," and call out the time (two o'clock).



Step a.

f. Ask the students to participate, showing times on the bean clock.

g. Stop the process at random intervals and ask a student to tell the time indicated by the bean clock. For example, if the first four cups are filled and the first 35 pockets are filled with beans, the time is 4:35, representing the passing of four hours and 35 minutes.

Synchronizing the Bean Clock

Type of Activity: entire class

Materials: bean clock, a standard clock or digital clock

Procedure: Ask students to set the bean clock according to the time on a standard clock (or a digital clock). For example, if the time is 8:30, students will place 60 beans in each of the first eight plastic cups and one bean in each of the first 30 egg carton pockets. Let students run the bean clock for a while, adding a bean per minute. Students may also work on their own, in pairs, or in small groups, checking each other's work.

Making a Minute Clock

Type of Activity: entire class
Materials: "Minute Clock" blackline master (p. 79), paper plates or cardboard circles, pencils, scissors, glue, tagboard, brads
Procedure:

a. Give each student a copy of the "Minute Clock" sheet and a paper plate or cardboard circle.
b. Direct students to count the marks on the clock face. Point out that every fifth mark is longer than the others.
c. Have students cut out their clock faces and glue them to the paper plates or cardboard circles, centering the clock face.
d. Cut a stencil for the minute hand, about 3-1/2 " long. Trace the minute hand on the tagboard, one for each student, and have the students help you cut out the minute hands.
e. Ask the students to count the marks around the clock again, by ones and then by fives. Have them write the five-minute interval numbers (5, 10, 15, and so on) on the paper plate or cardboard circle, between the long mark and the edge.
f. When the glue has dried, students may attach their minute hands to the clocks. Help each student poke the brad through the minute hand, then poke it through the plate or cardboard circle and bend the ends of the brad open.

Moving Minutes

Type of Activity: entire class/small group
Materials: student minute clocks
Procedure:

a. Have students set their minute clock hands to a time on the hour. Explain that the minute hand always starts a new hour on the twelve, at the top of the clock.
b. Ask students to move their minute hands to the first five-minute interval and state the time (five minutes after the hour). Students may take turns calling out the time as they continue moving the minute hand to the next five-minute interval. When students reach fifteen minutes after the hour, ask them to express this another way (quarter past the hour). When they reach 30 minutes after the hour, ask them to express this another way (half past the hour). When students reach 35 minutes after the hour, explain that this time may also be stated 25 minutes before the next hour. At each subsequent interval, have students give two expressions for the time (minutes after the hour and minutes before the next hour). Forty-five minutes after the hour may be expressed as quarter to the hour as well as fifteen minutes before the hour.
c. Name times at random. Have students set their minute clock hands to each time you name. You may wish to name only times to the five-minute intervals (for example, ten minutes after the hour, or twenty minutes before the hour). Students may work in small groups, naming times for the others in the group to show on their clocks.

Elapsed Time in Minutes

Type of Activity: entire class
Materials: student minute clocks
Procedure: Read the following story to the class. Ask students to move their minute hands to show the passing of time mentioned in the story.

It was three o'clock when school got out. After John left school, he walked to the store. It took him ten minutes to get there. He bought a carton of milk and sat on a chair outdoors to drink it. Five minutes later, he was

finished drinking his milk. Then John walked home. It took him twenty minutes to walk home. How many minutes had passed from the time John left school until the time he got home? (The answer is 35 minutes.)

Devise similar stories to tell the class.

Vary the amounts of time passed. If your students need a challenge, use times to the minute (such as "17 minutes" or "23 minutes"). Or have the total time passed exceed one hour, so that students must rename minutes as hours and minutes elapsed.

Making a Two-Handed Clock

Type of Activity: entire class
Materials: tagboard, scissors, student minute clocks
Procedure:

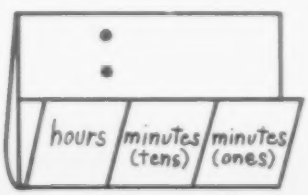
a. Cut a stencil for the hour hand, about 2 inches long. Trace it on tagboard, making an hour hand for each student. Have the students help to cut them out.
b. Direct the students to remove the brads from their minute clocks. Help students attach the hour hand to their clocks, poking the brad through the hour hand, the minute hand, and the paper plate or cardboard circle.
c. Direct students to write the hour times around the inside of the clock.
d. Now students are ready to do traditional two-handed clock activities. The preceding activities in this unit can now be done with the standard clock instead of the one-handed clock.

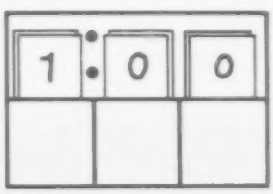
Making a Digital Clock

Type of Activity: entire class (or individual)
Materials: "Digital Clock" blackline master (p. 80), scissors, stapler, tagboard or index cards cut to 3 by 1-1/2 inches, glue or paste
Procedure:

a. Give each student 29 cards cut to 3 by 1-1/2 inches.
b. Have each student position the cards vertically on the desk or table and number them as follows, writing the number on the top half of each card: one through twelve, zero through six, and zero through nine.
c. Give each student a copy of the digital clock master.
d. Instruct students to fold back their sheets in half along the center line (with printing on the outside). Glue the two halves together.
e. Fold again along the dashed line (fold back) to make a pocket. Staple the pocket where indicated to create three sections to hold the number cards.

Step d.





Step e.

Using the Digital Clock

Type of Activity: entire class, small group, or individual. This activity is most effective if used after students have been introduced to place value (tens and ones).

Materials: digital clocks constructed in the previous activity, set of number cards (from previous activity)

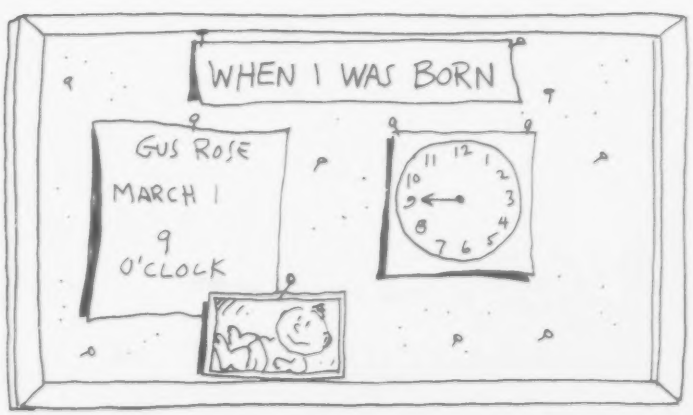
Procedure:

a. Have students arrange the number cards in three stacks: the sequence in the left-hand stack should be one to twelve, the sequence in the middle stack should be zero to five, and the sequence in the right-hand stack should be zero to nine. Students place the first stack in the "hour" pocket of the clock, the second stack in the "minutes (tens)" pocket, and the third stack in the "minutes (ones)" pocket. Their digital clocks now read "1:00."

b. Have students change the time in order by moving the top card in the "minutes (ones)" pocket to the back of the stack. To show the time "1:10," students must move the "9" card in the "minutes (ones)" stack to the back of the stack and then move the "0" card in the "minutes (tens)" stack to the back of that stack. Students should continue changing times until they comprehend how the digital clock works.

c. Name times at random and have students show these times on their paper digital clocks. Students may work in small groups, calling out times for the others to display, or they may practice showing digital time on their own.

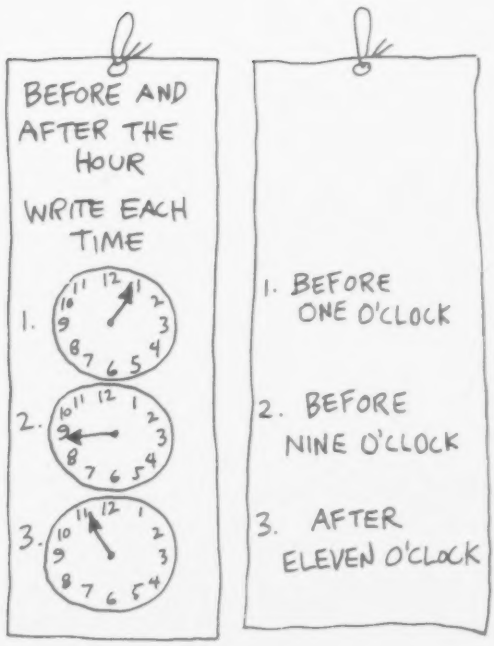
Bulletin Board Ideas



When I Was Born

Ask students to find out what time they were born. Have each student write her or his name, birthdate, and time of birth on a large index card. If you have a clock stamp, make an impression on each card and have students draw the time of their birth on their cards. In lieu of the clock stamp, reduce the "Minute Clock" reproducible master on p. 79, and make a copy for each student to show the time of his or her birth. If possible, have students bring baby pictures to attach to the cards.

If time to the minute is confusing to your students, they may write the time approximately to the hour (for example, "about six o'clock in the evening"). This is a good time to introduce and discuss A.M. and P.M.



Boardstrips

This display provides an independent activity for students who need a little extra practice with their time-telling skills. Adapt the boardstrips for any time-telling skill.

a. On a large strip of poster board, write a title to identify the time-telling skill, such as "Before and After the Hour." Give the following instructions beneath the title: "Write each time."

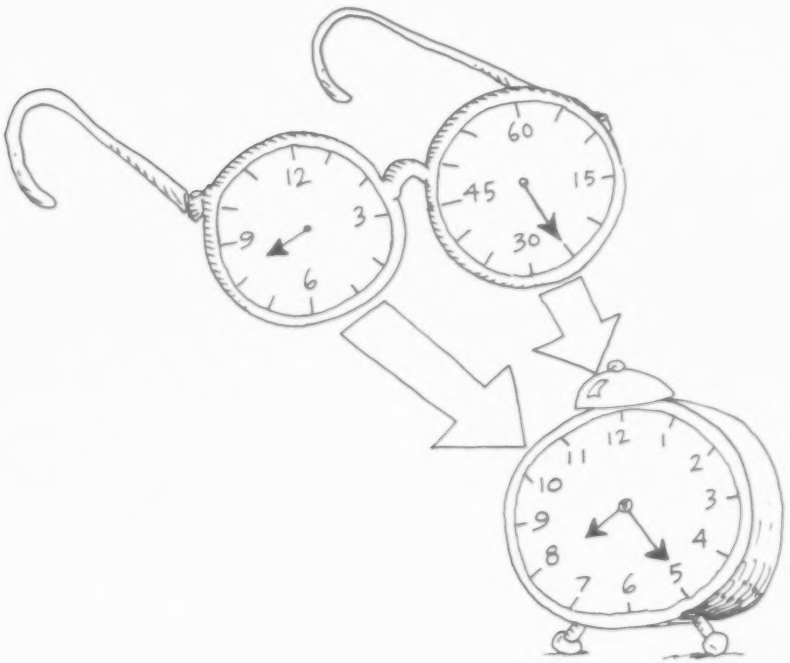
b. Punch a hole in the top of the poster board, thread a piece of yarn through the hole, and tie the yarn.

c. Draw, stamp, or paste clock faces (as many as will fit) down the poster board strip. Draw a hand on each clock face. Number the clocks.

d. Write the answers on the back of the poster board strip, directly behind the clocks. Number the answers. Hang the poster board strip above the chalkboard so it is at student height.

e. Have the student stand at the chalkboard, read the directions, and study each clock. He or she writes each answer on the chalkboard next to the corresponding clock, then turns the poster board strip over to check the answers.

Take a Look: Two Clocks in One
Use yarn, bright-colored construction paper, and a felt-tipped pen to construct the bulletin board display pictured below. Remind students how the hour clock and the minute clock work together. Discuss how the clocks are separate, that each can work alone, but that together they give a more exact time. The worksheet on p. 83 is designed as a follow-up to this bulletin board display.



Worksheets

Assign the following worksheets to be completed independently. These worksheets help students understand the minute hand and how the minute hand and hour hand work together.

Missing Minutes (p. 81)
Make a Minute Hand (p. 82)
Two Clocks in One (p. 83)

For additional worksheets, make one copy of each open-ended master (pp. 87–90). Fill in times or draw hands. Each copy becomes a new master from which to make student copies.

In One Minute I Can . . .

Use a one-minute timer. Complete some of these tasks. Time yourself for one minute for each task.

In one minute I can . . .

1. Answer _____ addition facts.
2. Count to ten _____ times.
3. Write my name _____ times.
4. Bounce a ball _____ times.
5. Stand up and sit down _____ times.

Now write some other tasks to time.

_____

_____

One Hand at a Time • Copyright © 1987 Dale Seymour Publications

How Many Minutes?

Work with a partner. Find out how many minutes it takes to do each task.

How many minutes does it take:

1. To answer 50 mathematics facts?

   _____ minutes

2. To read ten pages in your reading book?

   _____ minutes

3. To write all the numbers from one to 75?

   _____ minutes

4. To hook 40 paper clips together?

   _____ minutes

5. To walk to the school library and back?

   _____ minutes

Now write some other tasks to time.

_____

_____

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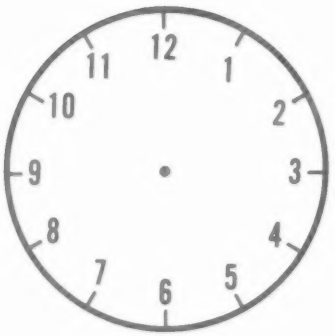
Time for Me



1. Choose a time. Show it on this clock.
2. Write the time. _____ : _____

3. Here are some other ways to say this time.

_____

_____

4. Draw a picture to show what you do at this time.

5. Write a story about this time.

_____

_____

_____

_____

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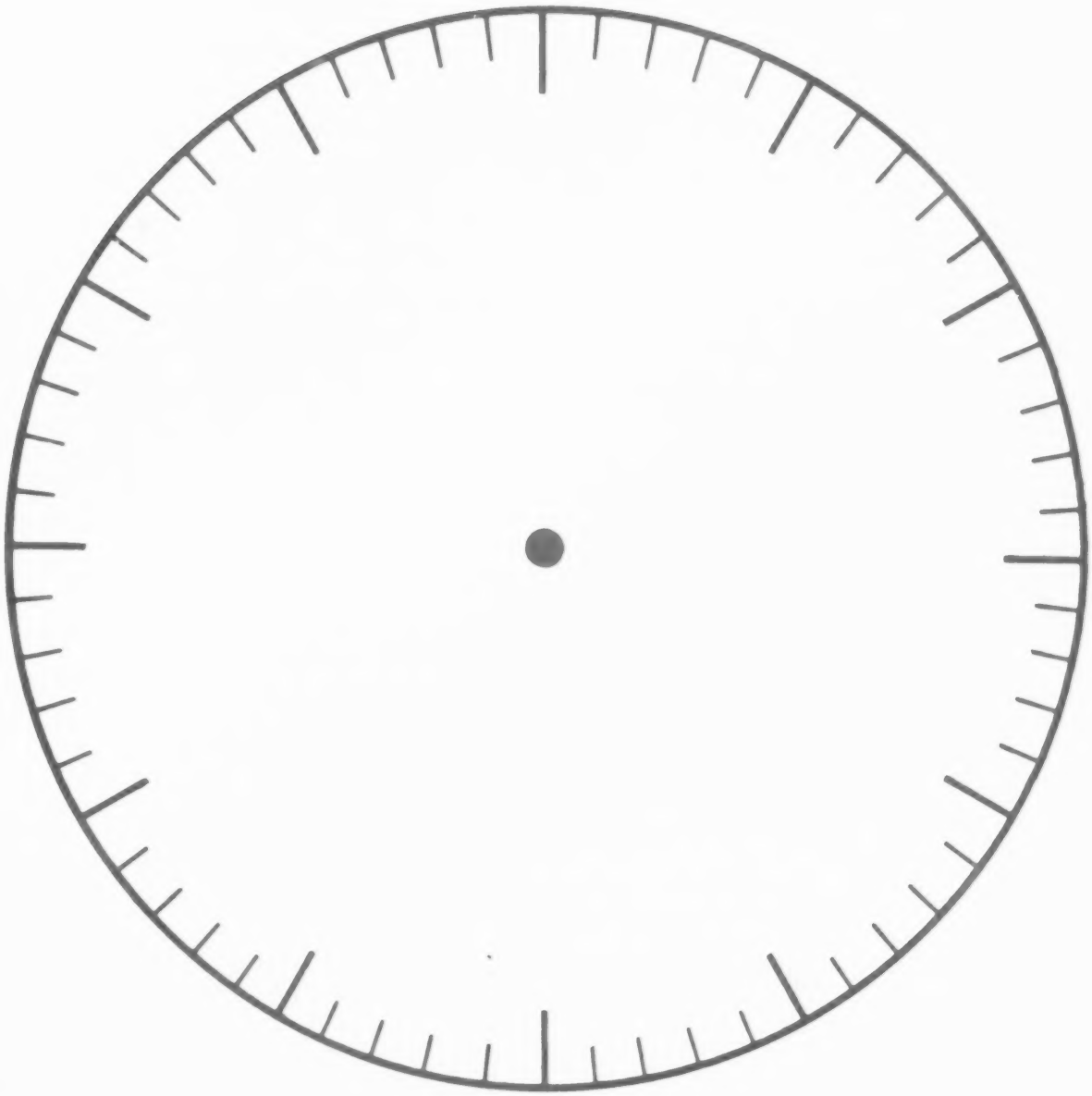
Minute Clock



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staple

hours

staple

minutes
(tens)

staple

minutes
(ones)

staple

fold back

Digital Clock

fold here first

(inside pocket)

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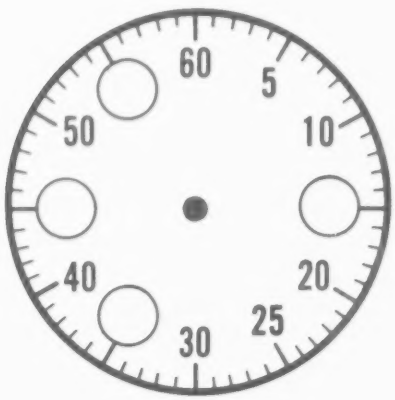
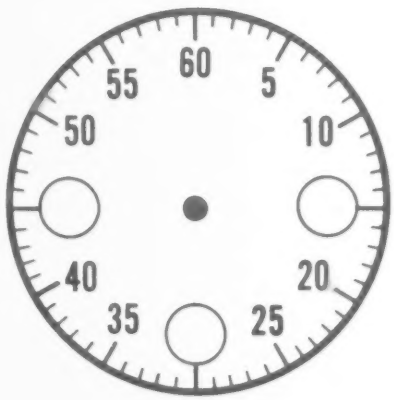
Missing Minutes

Each clock is numbered every five minutes.
Fill in the missing numbers.

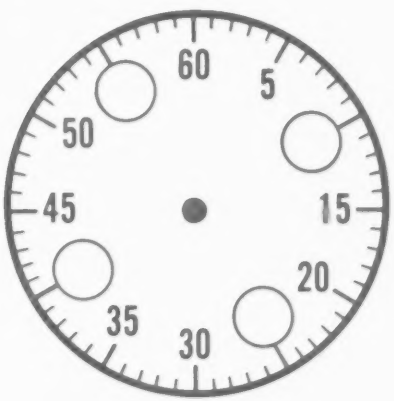
1.



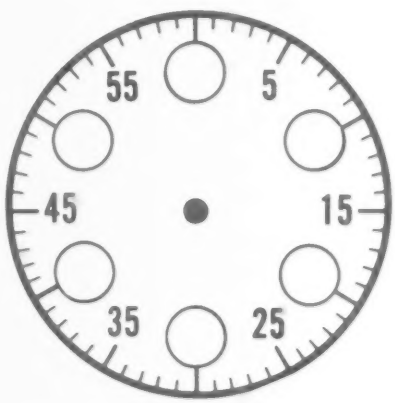
2.



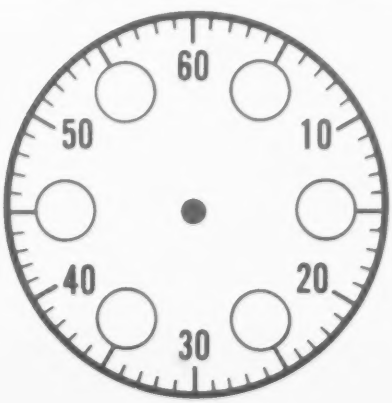
3.



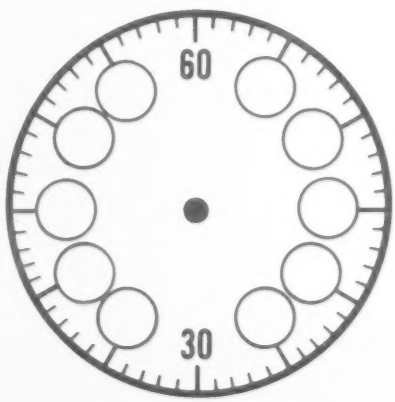
4.



5.



6.



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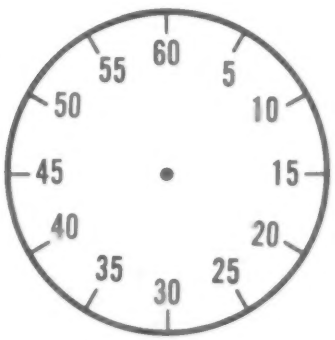
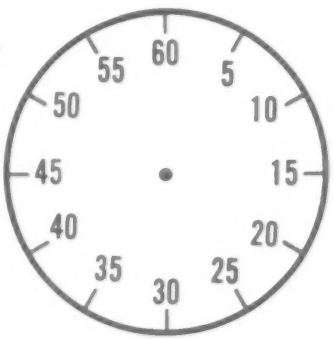
Make a Minute Hand

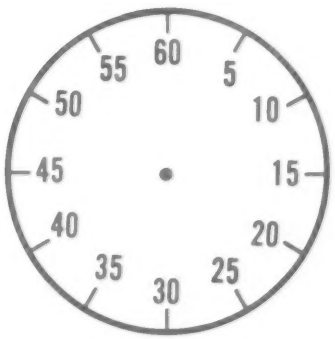
Draw a minute hand on each clock. Show the minute time given below the clock.

1. 

30 minutes after the hour

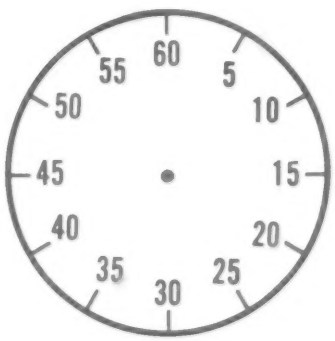
2. 

15 minutes after the hour

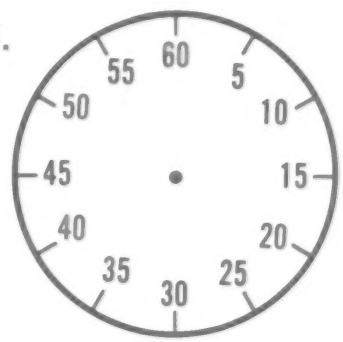
3. 

20 minutes after the hour

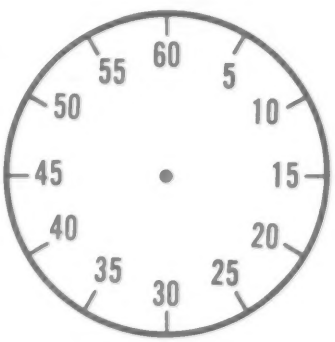
---

4. 

45 minutes after the hour

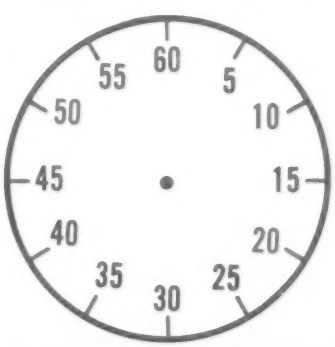
5. 

50 minutes after the hour

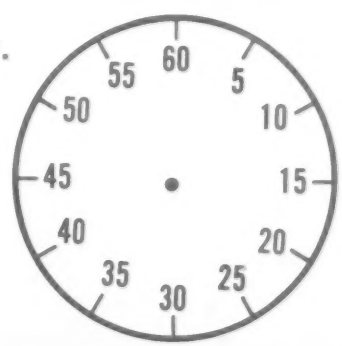
6. 

15 minutes *before* the hour

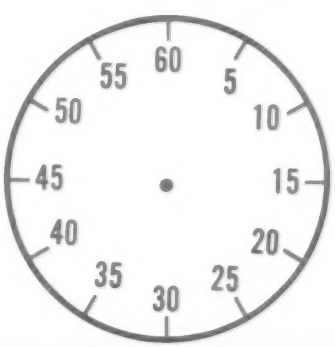
---

7. 

20 minutes *before* the hour

8. 

5 minutes *before* the hour

9. 

25 minutes *before* the hour

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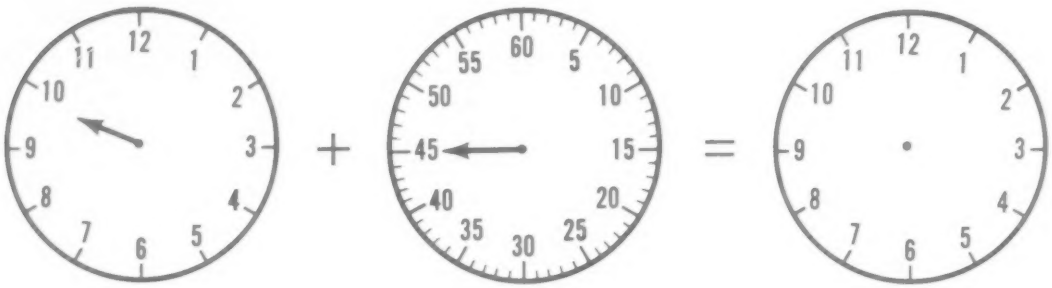
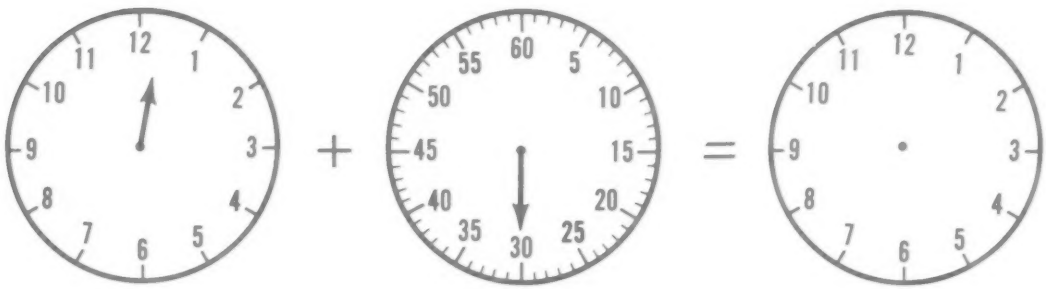
Two Clocks in One

For each exercise, read the hour clock. Read the minute clock. Put the two clocks together. Draw the hour hand and the minute hand on one clock.

Hour Clock Minute Clock

1.

2. 

3. 

4.

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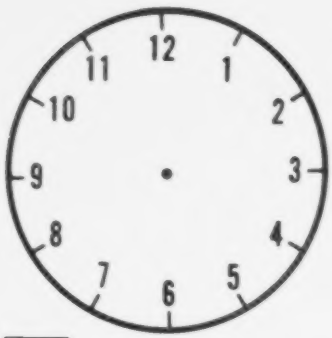
Open-Ended Blackline Masters

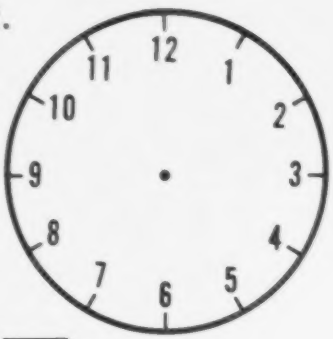
This section offers five blackline masters that may be used numerous times for targeting different specific time-telling skills. For each master, make one copy, then fill in times on the clocks and/or on the labels before you make copies for student use. Use these masters to provide additional practice or to reinforce time-telling skills.

What Time Is It?

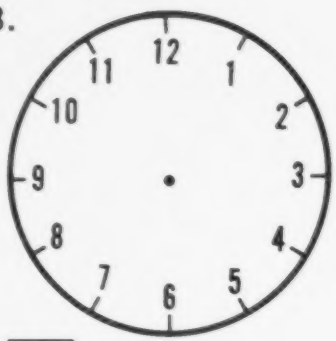
Write each time in the space below the clock.

1. 

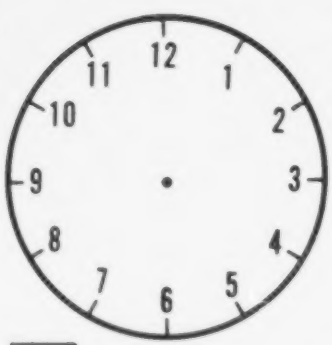
☐ o'clock

2. 

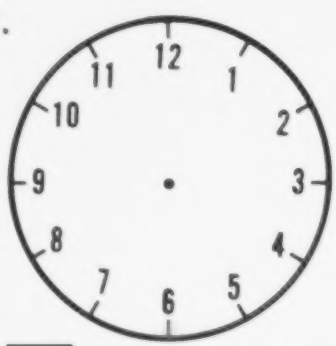
☐ o'clock

3. 

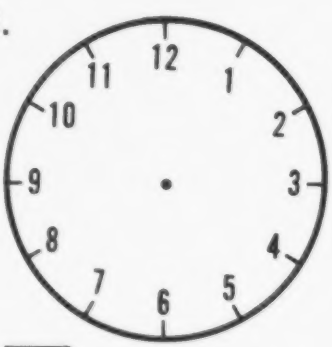
☐ o'clock

4. 

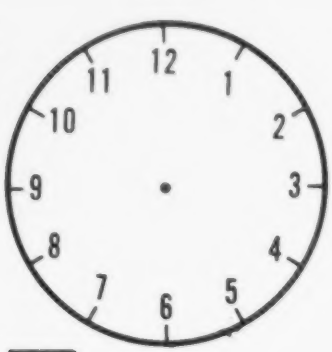
☐ o'clock

5. 

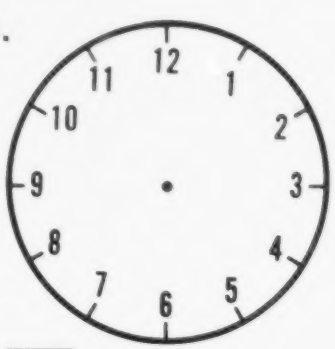
☐ o'clock

6. 

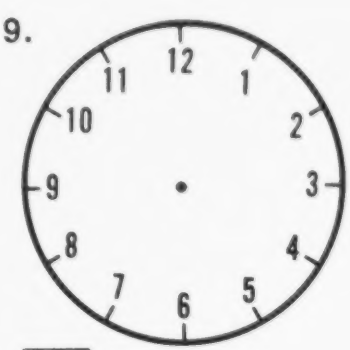
☐ o'clock

7. 

☐ o'clock

8. 

☐ o'clock

9. 

☐ o'clock

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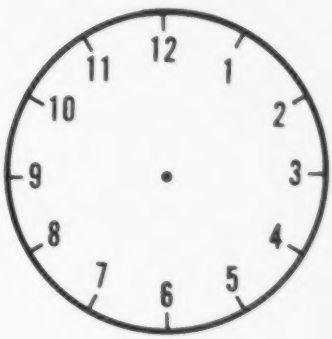
Can You Give Me a Hand?

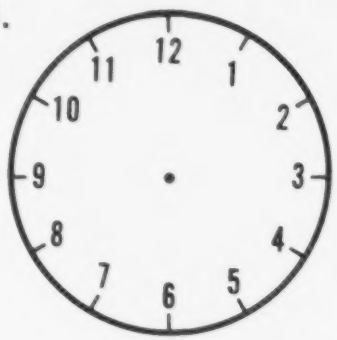
Show each given time. Draw the clock hand in the correct place.

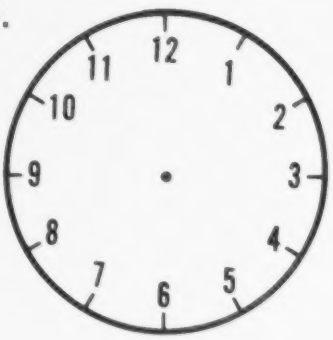
1.

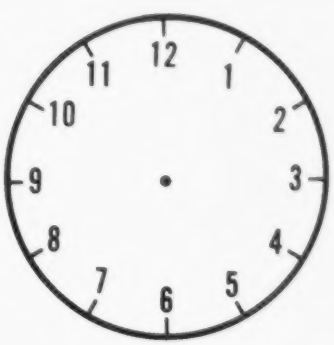
2.

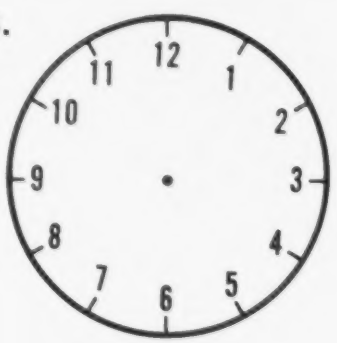
3.

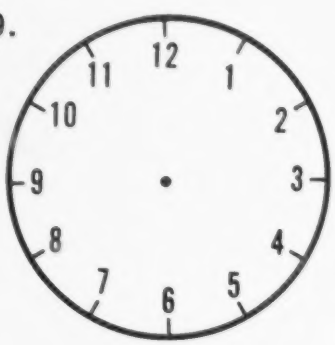
4. 

5. 

6. 

7. 

8. 

9. 

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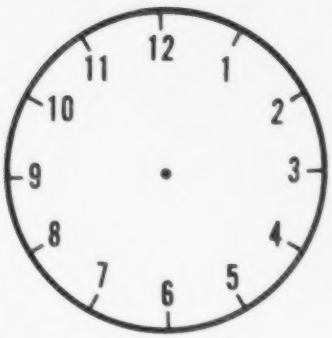
Write the Time

Look at each clock. Write the correct time.

1. 

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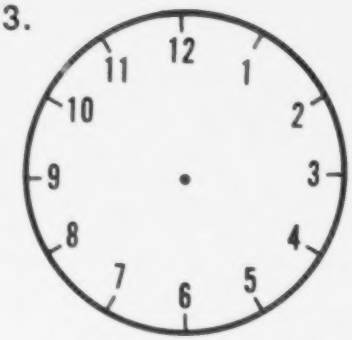
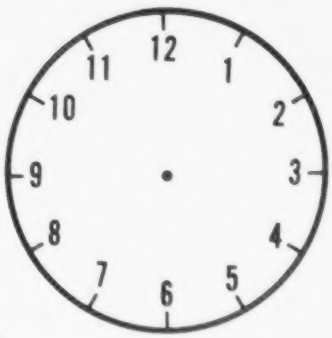
2.

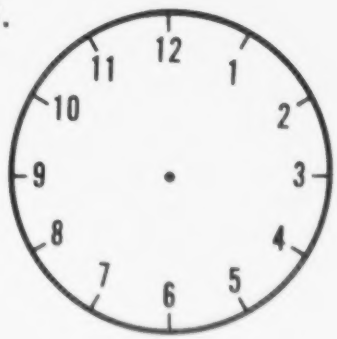
_____

3. 

_____

4. 

_____

5. 

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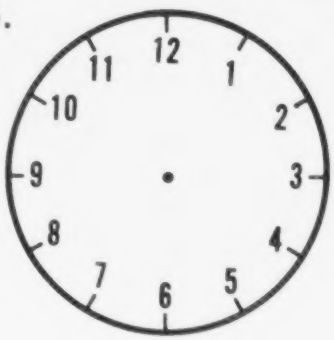
6. 

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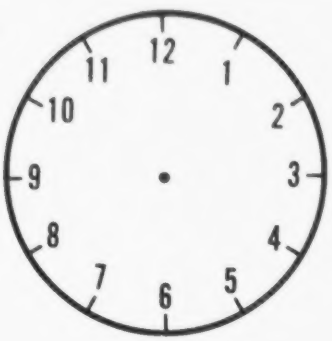
7. 

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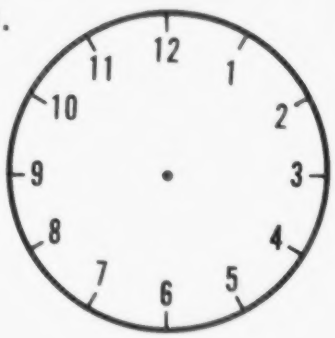
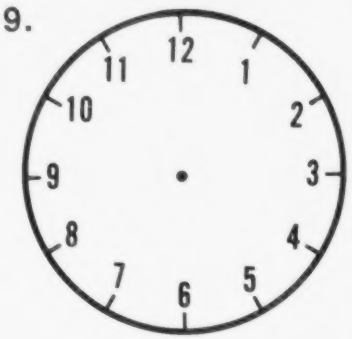
8. 

_____

9. 

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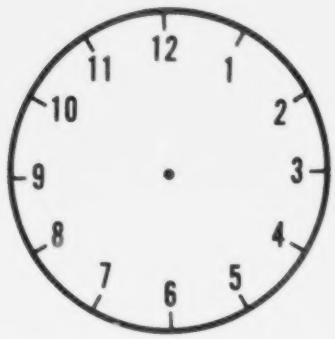
Writing Digital Time

Look at each clock. Write the correct digital time.

1. 

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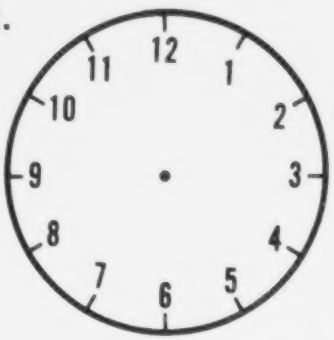
2. 

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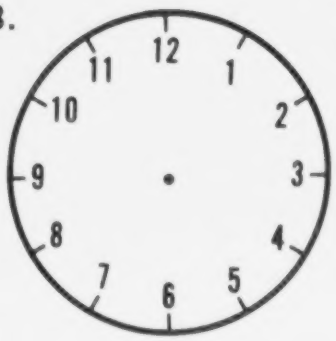
3. 

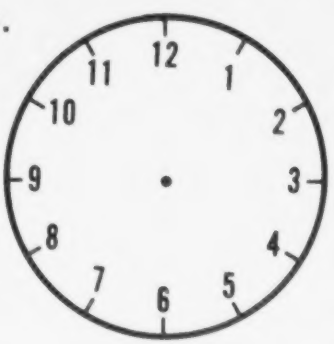
: _____

4.

: _____

5.

: _____

6. 

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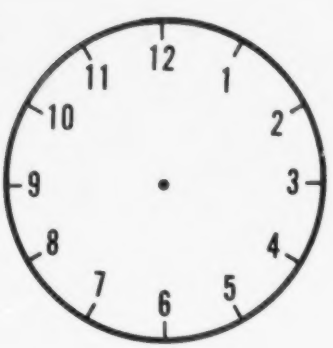
7. 

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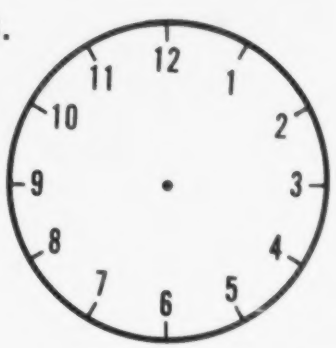
8. 

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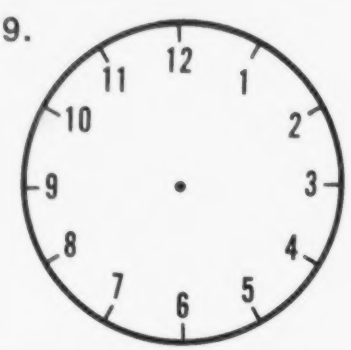
9. 

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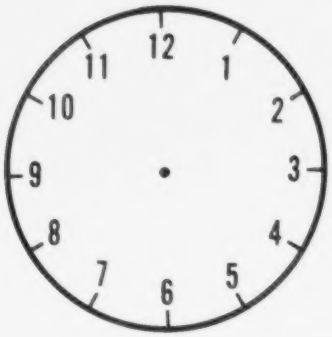
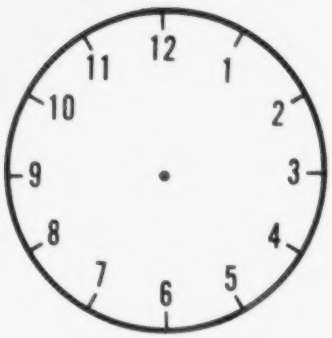
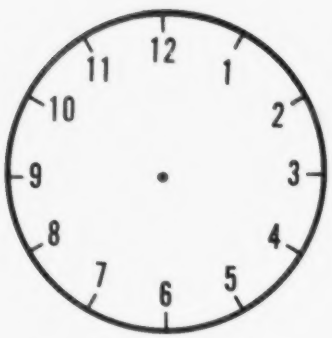
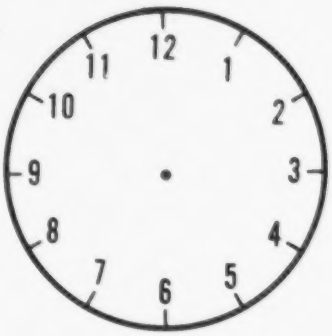
Make Them Match

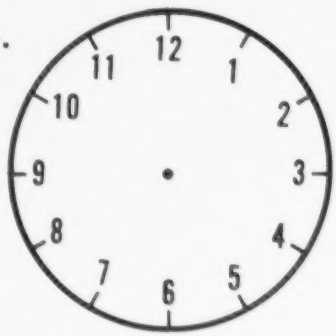
Match each clock to the correct time. Draw lines.
There will be two times left over.

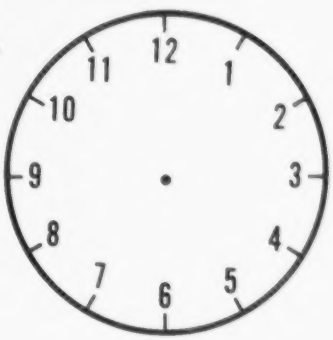
1. 

2. 

3. 

4. 

5. 

6. 

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Learning to tell time can be a real challenge for young students. This book teaches how each hand of the clock is used for telling time, starting with the hour hand. Students first gain a thorough knowledge of what an hour is and how an hour hand functions. Eventually, they learn how the two hands of a clock work together—but only when they understand how each hand works individually.

You can use the materials and approach in *One Hand at a Time* as your developmental program for teaching time-telling skills to primary, remedial, or special education students. A wide range of teaching preferences and learning styles are accommodated by this book's variety of stories, activities, games, bulletin board ideas, and worksheets. The stories and activities also help integrate mathematics with social studies, language arts, and science.

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